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American Cinematographer

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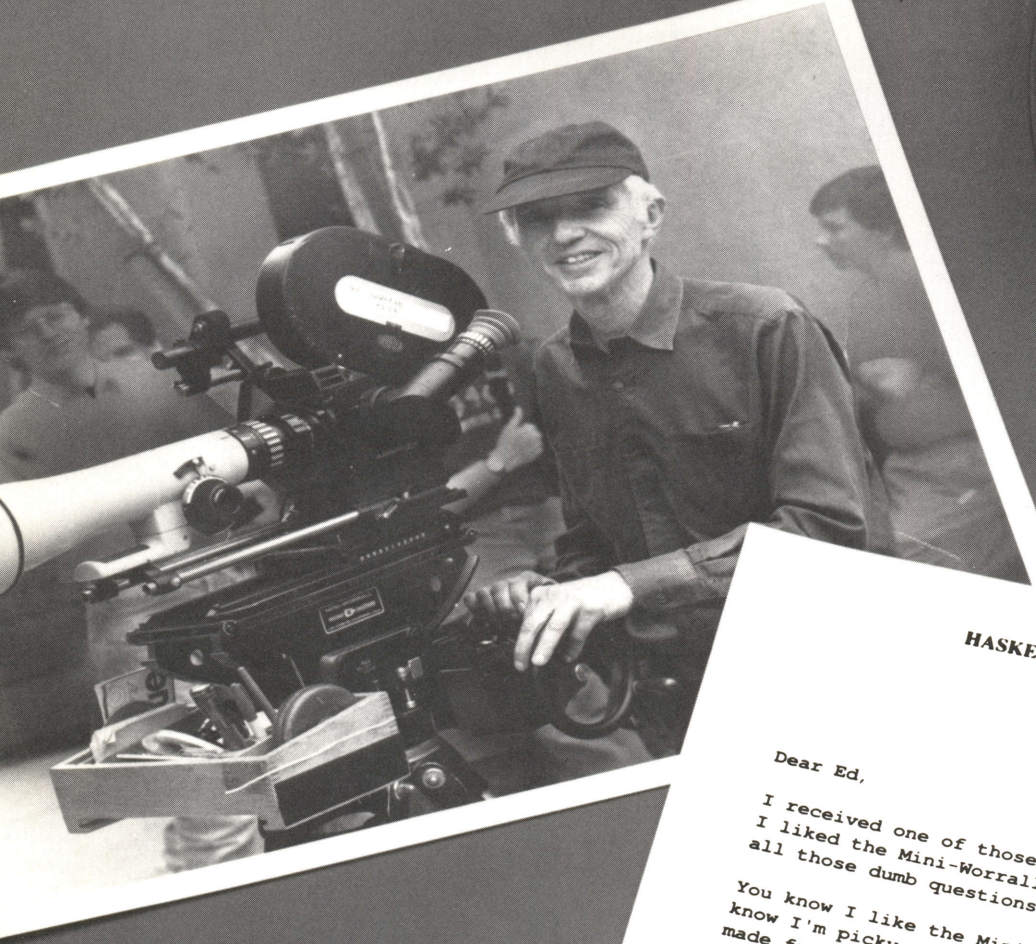

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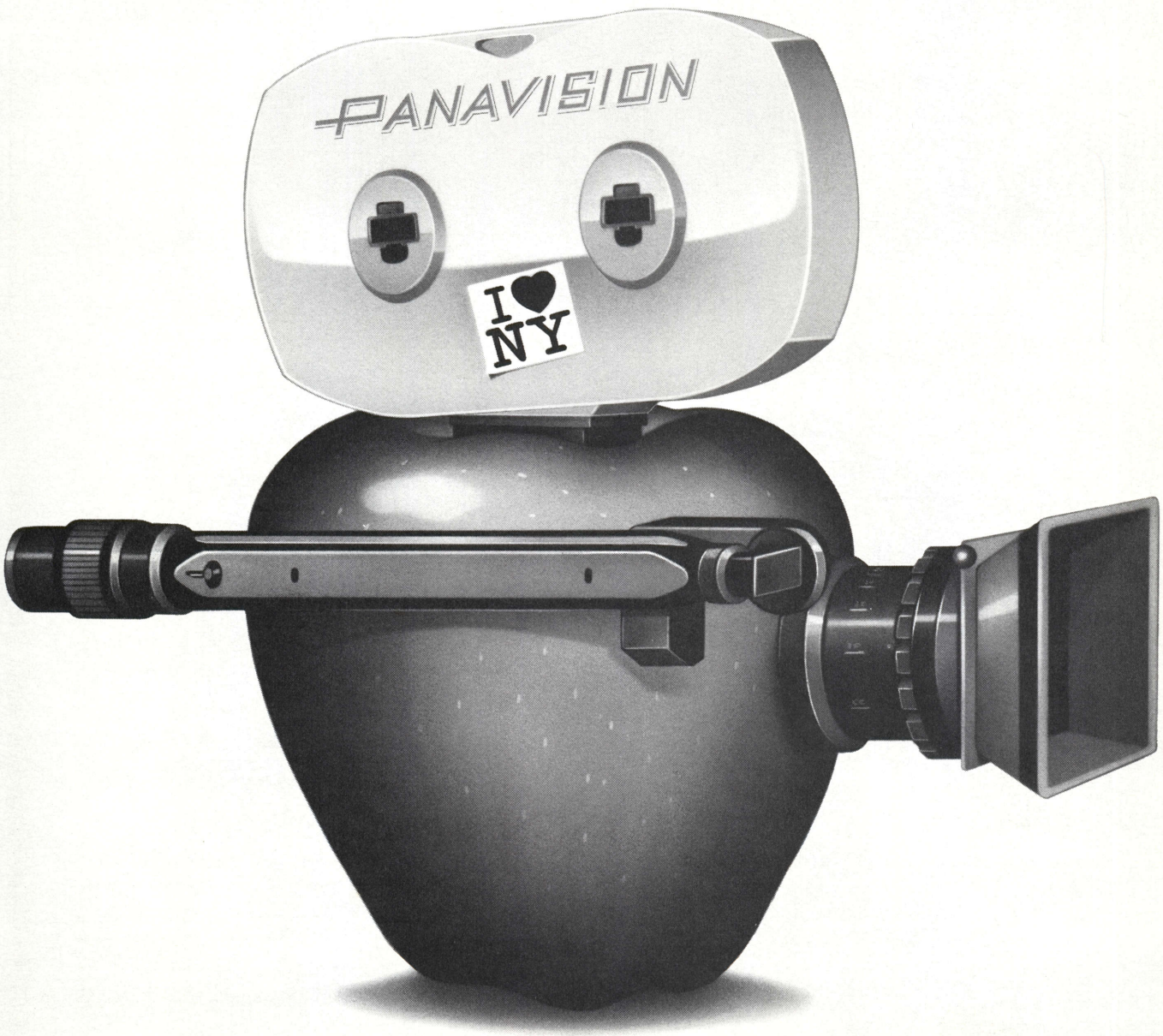

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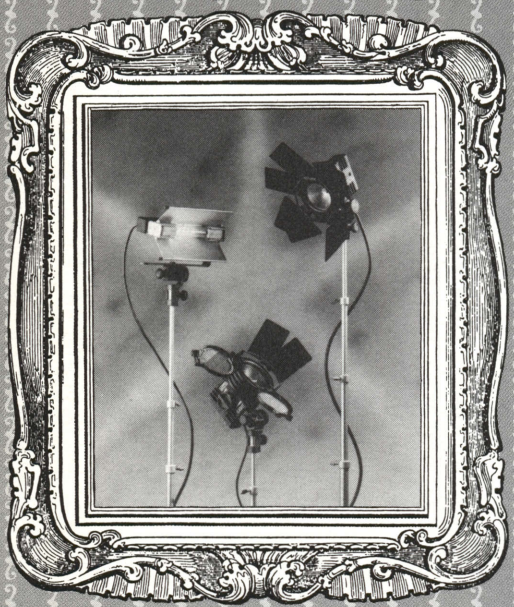

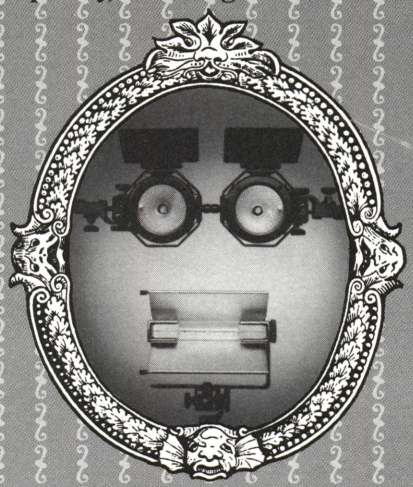

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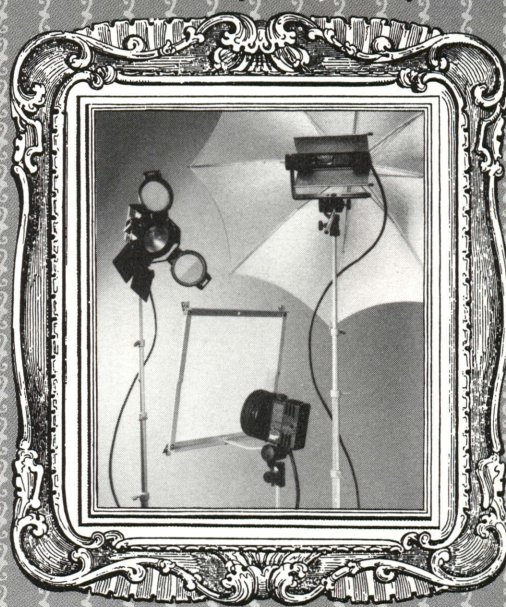

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January 1988 Vol. 69 No. 1

American Cinematographer

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On Our Cover:
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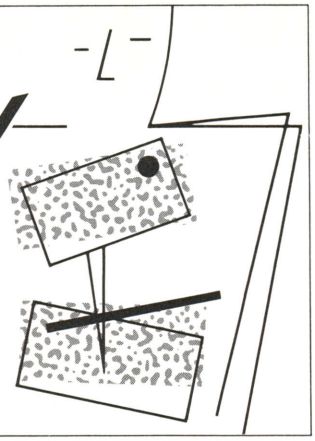

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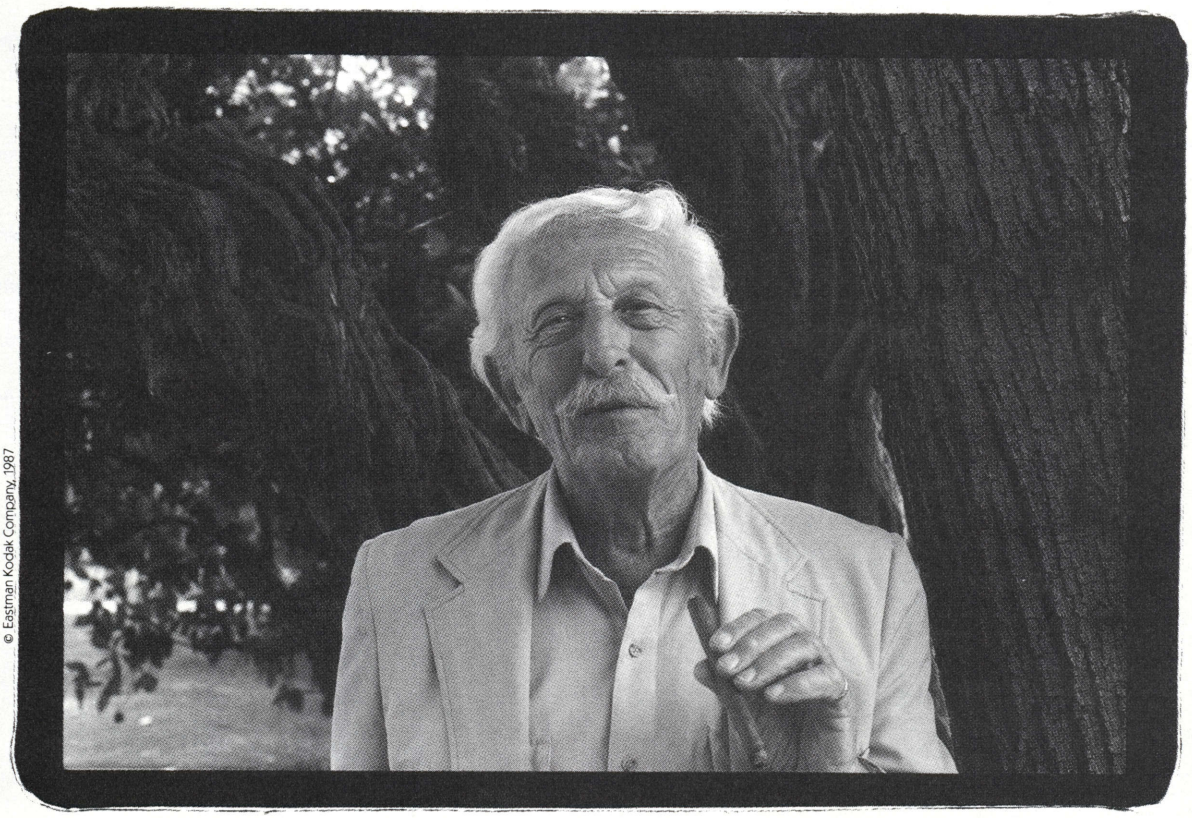

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on film:

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Harry Wolf is president of the American Society of Cinematographers. During his career, he has shot millions of feet of Eastman film. He has been awarded Emmys for "Columbo" and "Baretta."

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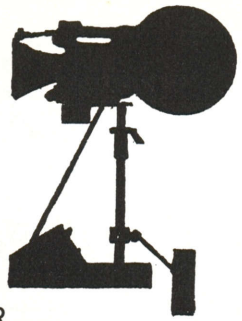

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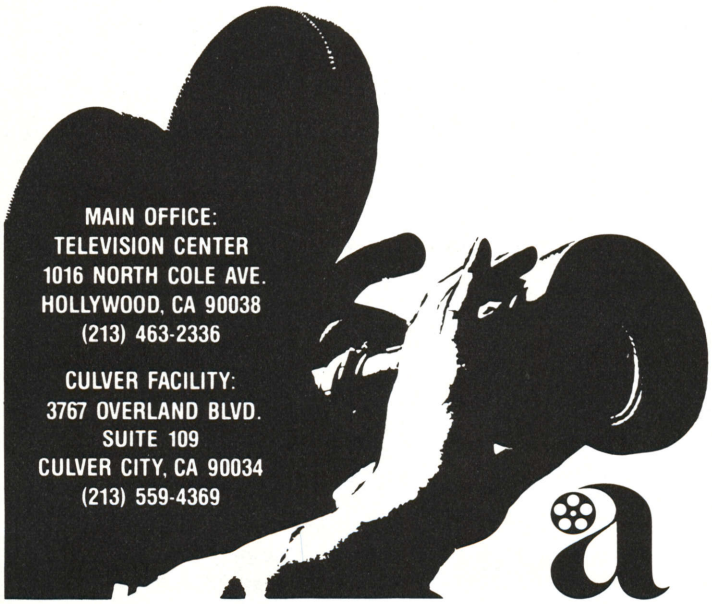

American Society of Cinematographers

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials ASC *after their names.* ASC *membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.*

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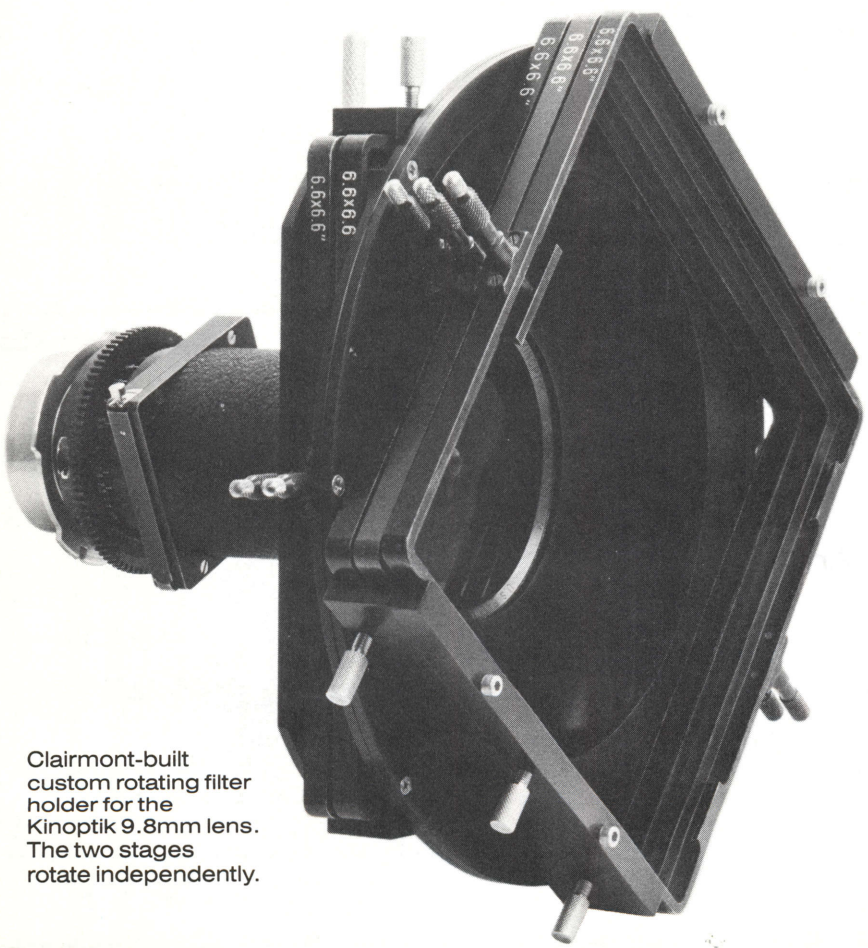

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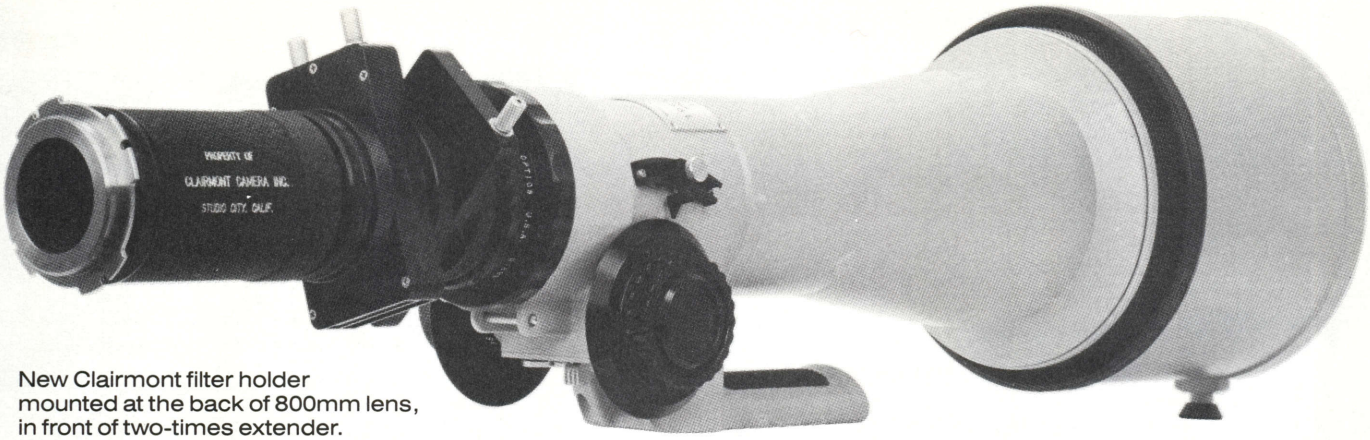
Our filter system includes ways to put our filters on all our lenses. With the Clairmont mounting system, you can put as many as six filters on every focal length from 9.8mm to 1600mm. With most focal lengths, you can mount seven.

All our filter-holders have multiple rotating stages. You can slide a filter on in seconds and set it to any angle. That includes polarizers and grads on the 9.8mm Kinoptik and the 1600mm Canon.

Custom Clairmont rotating holder for 9.8

Our holder for the Kinoptik lets you mount five square 6.6 filters



New Clairmont filter holder mounted at the back of 800mm lens, in front of two-times extender.

in two rotating stages. And you can insert a 2×2 inch filter inside the lens. Total: six filters. As you can see, our big 6.6 frame gives you plenty of room to move a grad across, from any angle.

Expanded 6.6 Box adds 3 more filters

The standard ARRI 6.6 Matte Box has a rotating stage that accepts three square filters. You can also mount a rotating round filter at the back. Our expanded 6.6 Matte Box has an additional rotating stage that accepts three more square filters. Total: seven filters.

New Clairmont rear-mounted telephoto rotating stages

As you know, effects filters don't work in front of very long lenses. And even *solid* filters, in front, degrade the image. So people use up to three 40.5mm round filters screwed inside the backs of the long Canons and Nikons.

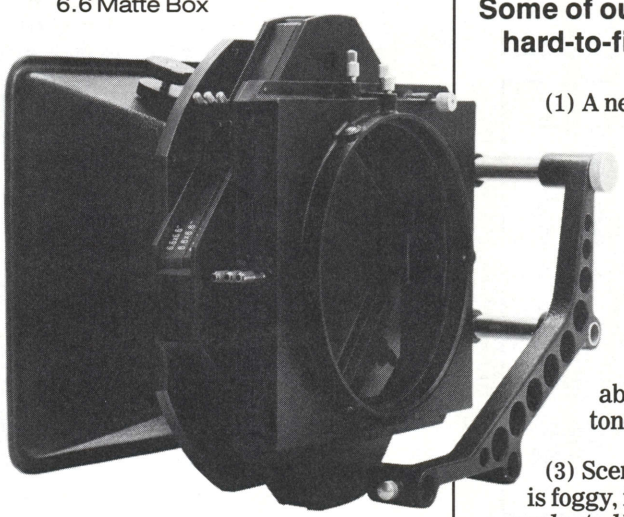
Screwing around

That means disconnecting the lens from the camera, reaching inside, screwing and unscrewing. A slow business, especially when the sun's going down. Rear screw-ins also mean you can't use polarizers and grads. Well, now you can.

Speed

With our new Telephoto Filter Unit, you don't have to remove the lens from the camera, unless you want more than three filters. This new Clairmont Unit has three rectangular rotating stages. Our custom filters (in trays) slide right in.

Clairmont expanded 6.6 Matte Box



Accuracy and control

There are knobs on the rotating stages. Turning them lets you slowly move an effect filter across the frame—and see the result in the viewfinder. And you can rotate a polarizer.

Which lenses?

This new Telephoto Filter Unit works with Nikon 400mm and 600mm lenses; and it works with Canon 500mm, 600mm and 800mm lenses. With the excellent extender made by Century Precision, the longest Canon becomes a 1600mm.

Some of our new and unusual hard-to-find effects filters:

(1) A new Day-For-Night that *doesn't* make closeup faces look blue. With this one, you keep your 85 filter on the lens.

(2) The Enhancer makes reds, oranges and yellows really *pop*, without a noticeable effect on the cooler tones in the image.

(3) Scenic Fog. Background is foggy, foreground less so. It's a *graduated* Fog, denser in the sky area at frame top. Five densities.

(4) Black SupaFrost. No highlight spill; definition and focus affected less than with a diffusion filter. This one comes in seven densities.

(5) Diffusion Wedge. It's fifteen inches long; diffusion intensity varies along its length. You can vary the diffusion *during* the shot.

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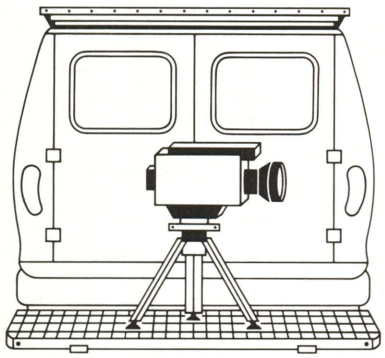

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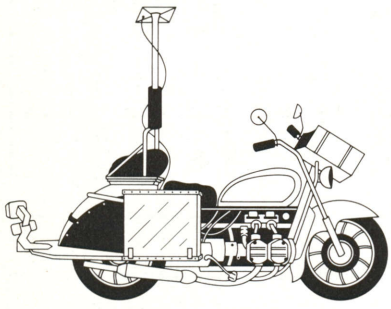

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The Bookshelf

by George L. George

The 3rd edition of **The Production Company/California** contains detailed listings of commercial/industrial firms specializing in live action (film/tape), animation, special effects, jingles and music videos. Edited by Kathleen M. Wells-Anderson, it is a thorough and convenient source book of California facilities and personnel. *(Production Books, Hollywood, $19.95).*

Between 1931 and 1952, Monogram Pictures released over 700 "B" feature films whose elemental entertainment values and low budgets largely compensated, in the eyes of studio chiefs, for their more than modest artistic merit. Ted Okuda's **The Monogram Checklist** compiled a valuable reference record that includes these films' cast and credits, production data, release date and a plot synopsis *(MacFarland, Jefferson, NC, $29.95).*

The portraying of psychiatry and its practitioners in the more than 250 American movies produced since 1904 is explored in a well-documented survey by Krin and Glen O. Gabbard, **Psychiatry and the Cinema.** Seven films, including Hitchcock's *Psycho*, Woody Allen's *Zelig*, and Ridley Scott's *Alien*, are subjected to extensive in-depth analyses in the context of American culture, film theory, and the history of American psychiatry. *(U. of Chicago Press, Chicago, $24.95).*

How to write and sell screenplays is discussed in two current books. Prof. Alan A. Armer, a film/tv professional turned academic, examines the principles and techniques of the craft in **Writing the Screenplay: Film and TV,** an informative and highly readable text. In **The Screenwriter's Guide,** Joseph Gillis offers useful tips on the successful presentation, protection and sale of film/tv scripts, together with a master list of agents and producers. *(Wadsworth, Belmont, CA, $19; NY Zoetrope, NYC, $9.95).*

In **Aldous Huxley and Film,** Virginia M. Clark discusses the four notable screenplays he wrote *(Pride and Prejudice, Madame Curie, Jane Eyre* and *A Woman's Vengeance)* from the point of view of the symbiotic relationship between cinema and literature that characterized the British author's career. *(Scarecrow, Metuchen, NJ, $19.50).*

The life and times of Rainer Werner Fassbinder are explored by Robert Katz in an unsparingly realistic biography, **Love Is Colder Than Death.** The prolific career of the late German director – 43 films in 16 years – was marked by a compulsive drive for drugs, sex and work that was reflected in his films' cynical and gloomy image of German society during and after WWII. *(Random House, NYC, $19.95).*

In **The Films of Carol Reed,** Robert F. Moss views with perceptive empathy the director's versatile gifts strikingly evidenced in such disparate films as *The Fallen Idol*, *Trapeze* and *The Third Man*. Their visual inventiveness, literary narrative style and controlled emotionalism are traced to Reed's traditionally intellectual British upbringing of behavioral reticence. *(Columbia U. Press, NYC, $27.50).*

A new volume in the valuable Directors Guild of America Oral History series, **Henry Koster** by Irene Kahn Atkins sums up a rewarding and successful career. Fleeing Hitler's Germany in 1933, Koster ably adapted his directorial skills to the Hollywood studio system and made 45 films in a wide variety of genres, all marked by considerable charm and sensitivity. *(Scarecrow, Metuchen, NJ, $20).*

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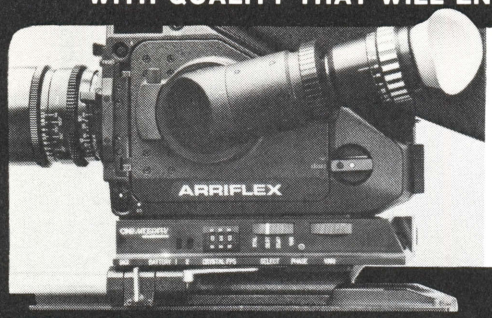

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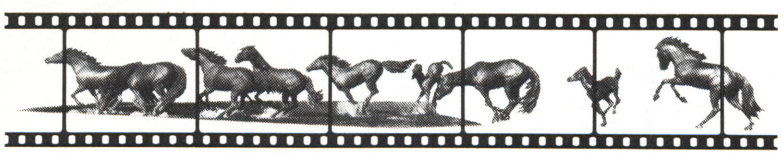

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tors are assessed in discerning studies of their films and personalities. Peter Brunette's **Roberto Rossellini** stresses the esthetic innovations, neo-realistic approach and story-telling directness that gave Rossellini's dramatic films and television documentaries their compelling authenticity and concerned humanism. Hollis Alpert's **Fellini: A Life,** in a new paperback edition, draws an insightful portrait of the director, his flamboyant ways and his richly creative career. *(Oxford U. Press, NYC, $29.95/14.95; Paragon House, NYC, $9.95).*

Probing the influence of cinema on Italian society, Millicent Marcus examines, in **Italian Film in the Light of Neo-realism,** milestone works, such as Rossellini's *Open City*, DeSica's *Bicycle Thief* and Fellini's *La Strada*, that sought to induce moviegoers to face the economic, political and human problems of their time. *(Princeton U. Press, Princeton, $48/17.50).*

Perpetuating the highly regarded "Who's Who in the Theatre," the 4th edition of **Contemporary Theatre, Film and Television** provides biographical and career information on over 700 active professionals, in addition to the 2500 appearing in the three previous volumes. Expertly edited by Monica O'Donnell, **CTFT** is an invaluable source of reference to the entertainment world, with extensive data on creative personalities, technicians and executives. *(Gale Research, Detroit, $98).*

Raymond Sarlot, co-owner of Chateau Marmont, long a plush Hollywood hostelry, evokes in **Life at the Marmont** his establishment's past glories. Written with Fred E. Basten, the book reels off the names and circumstances of celebrities who visited, lived and sometimes died in this legendary landmark, *(Roundtable, Santa Monica, CA, $19.95).*

Chris O'Grady's memoirs of an obsessive moviegoer, **Love Song to a Long Gone Time** evokes with feeling and flair the many films that nurtured his affectionate enjoyment of a lifelong dedication. *(Vantage, NYC, $15).*

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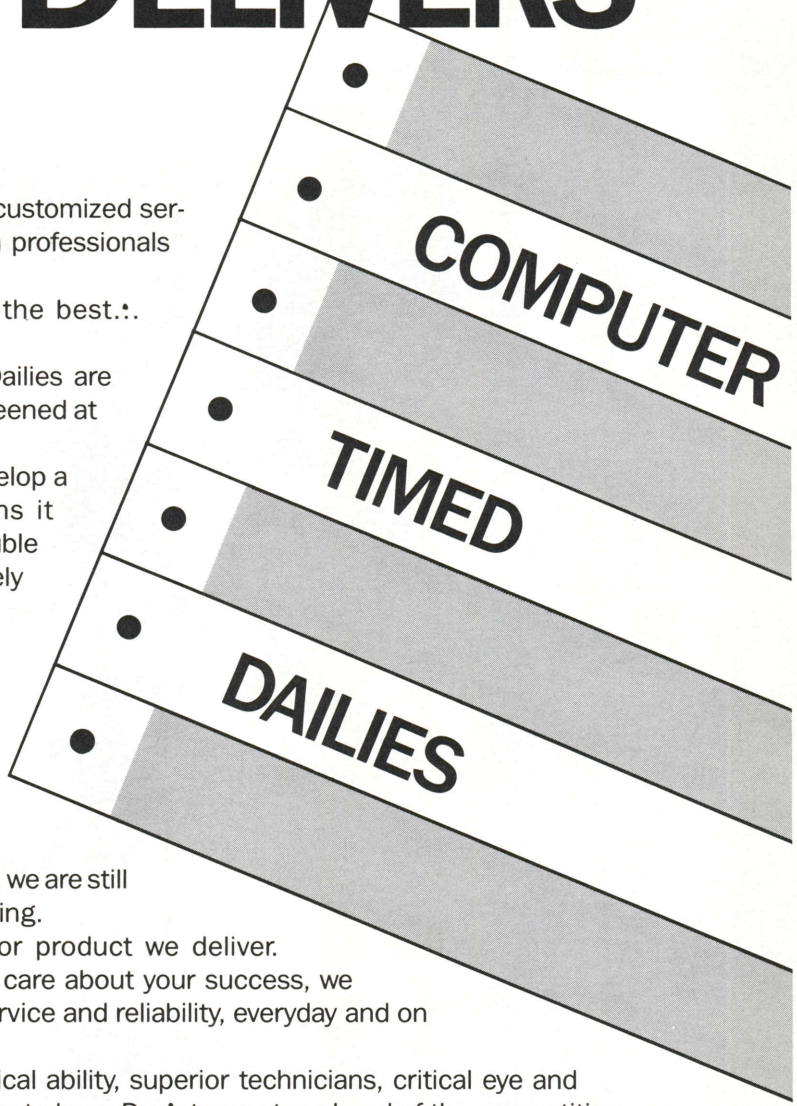

Du Art delivers and delivers...

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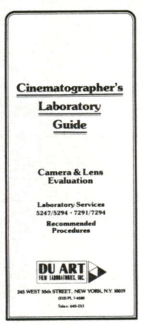

And, our innovative technical ability, superior technicians, critical eye and professionalism, all contribute to keep Du Art one step ahead of the competition.

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Du Art, the best name in Dailies because Du Art delivers and delivers...

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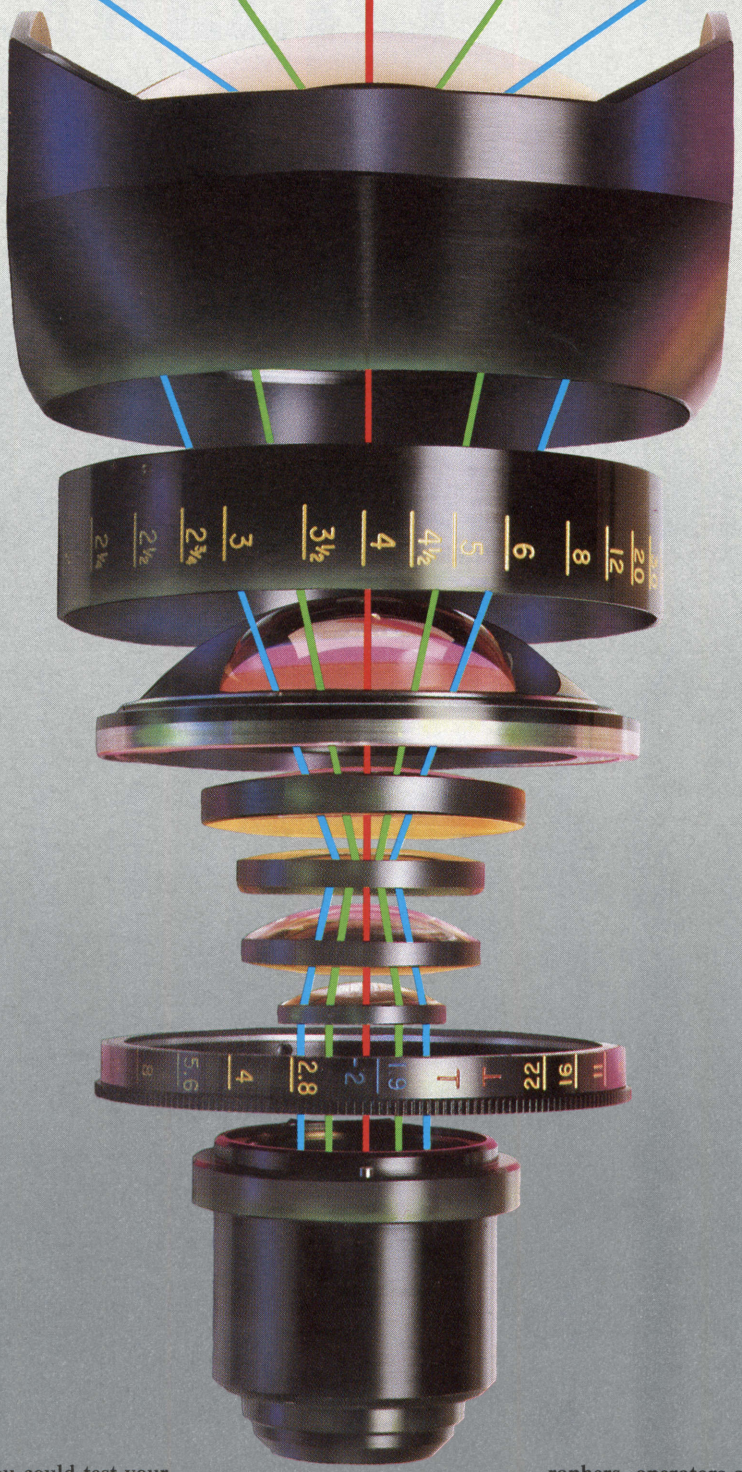

What if there were a place where you could test your lenses and filters before you shot with them? A place where MTF computers, solid-state spectrophotometers, and optical benches stood ready for you to explore modern optical design and separate fact from fiction. What if this place were a million dollar R & D lab created specifically for the design and testing of motion picture lenses?

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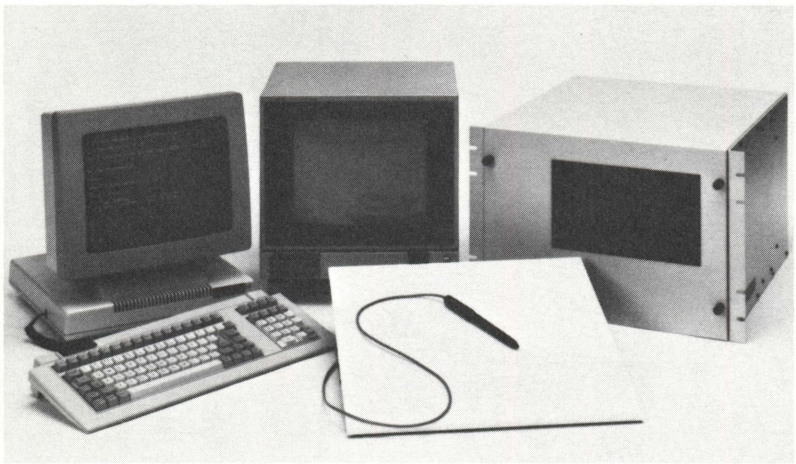
New High End Graphics System



A new, full color graphics system that provides paint, 3D modeling and animation capabilities was introduced by Quanta Corporation at the 1987 SMPTE conference. Called the Artista system, it has been designed to combine high-end graphics with ease of use.

The standard paint features of Artista offer many capabilities for a variety of applications. Among these features are a flash digitizer for instant full-color camera capture; user-definable brush types that include transparent, neon, chrome, anti-aliased, movie, dither and pastel; 16.7 million available colors (365,000 displayable) as well as pop-up color palette with on-screen color mixing or select; and horizontal, vertical, up/down slope and automatic tile backgrounds. Five multi-colored or anti-aliased fonts are standard with either 3D edges or drop shadows. Stencil cutting is also available by drawing or text. Cut-and-paste capabilities feature X and Y perspective, proportional enlargement and reduction, rotations and filtering.

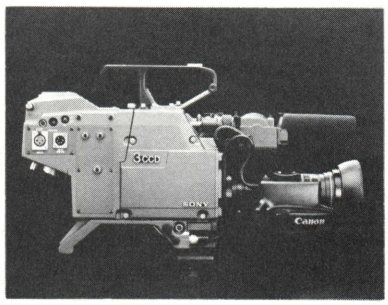
Complementing the versatile paint features are advanced 3D modeling and animation capabilities that allow the user to create striking, high quality graphics and video art. Hierarchical structure is available for linking 3D objects together to simplify manipulations. Once rendered, the three dimensional stills can overlay paint or camera capture pictures. To animate the 3D images, a user-friendly keyframe method is employed to describe the object's path, allowing for adjustment of the path's tension, continuity and bias. The Artista then provides a real time preview to give the user the opportunity to make changes or refinements before single-frame recording onto disk or tape via an optional VTR controller.

Artista is housed in a 13-inch high rack-mountable chassis that features two 5¼-inch floppy disk drives, a 190 megabyte hard disk and a 32 megabyte cartridge tape streamer for hard disk backup and archiving. The system offers 24-bits-per-pixel with eight additional bits for transparency and stencils, a resolution of 756 pixels by 512 lines in NTSC (740 by 577 in PAL) and two separate frame buffers (genlocked RGB, NTSC or PAL).

The Artista display terminal, bitpad, stylus and keyboard combine strong ergonomic features with high-performance functions. The terminal boasts a 14-inch non-glare screen, a fast screen refresh rate and tilt-and-swivel capability. All paint, text, 3D and animation functions are displayed on the terminal menu and are easily accessed by the stylus on the bitpad or through the keyboard. To facilitate rapid operation, eight "hot" buttons on the bitpad trigger instant access to frequently used functions.

Options for Artista include software to output high resolution pictures from the system to printers, and an animation video tape recorder controller for frame-by-frame recording of animation.

For more information: Quanta Corp., 2440 Progress Drive, Salt Lake City, UT 84119, (801) 974-0992.



New Generation of CCD Cameras

Sony Broadcast Products Division has introduced a new CCD camera that is designed to handle electronic field production as well as electronic news gathering. The BVP-50 improves upon previous CCD camera performance with the elimination of vertical smear, an electronic shutter and a greater signal-to-noise ratio.

Vertical smear connected to intense highlights is an artifact that has been common to CCDs, but the frame interline transfer system used with the BVP-50 eliminates this problem. By immediately transfering charges at high speed from registers to second storage arrays, the frame interline leaves virtually no time for any build-up of contamination that would cause the vertical smear.

The electronic shutter introduced in this new generation of Sony CCD camera can be configured to any one of seven operating speed controls: 1/100, 1/125, 1/175, 1/250, 1/500, 1/1000 and 1/2000 of a second. For convenience, the selected speed is indicated by an alpha-numeric

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LITT Briefcase

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IF YOU HAD TRACK ROLLED UP IN A BAG

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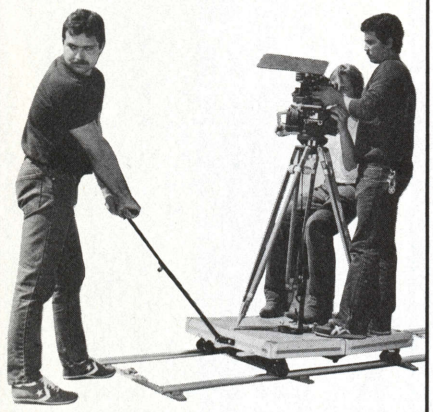
MATTHEWS BRIEFCASE DOLLY AND FOCUS TRACK



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readout in the viewfinder CRT.

A key improvement featured in the BVP-50 is its signal-to-noise ratio of 60dB, as compared to a ratio of 58dB for the BVP-5. To minimize the noise within the CCD, Sony's ongoing refinement of solid state technology has resulted in a more sophisticated sensor design and manufacturing process control.

The ability to handle intense highlights and the wide selection of electronic shutter speeds make the BVP-50 a high-end ENG camera while also qualifying it for such EFP applications as rock concerts and documentaries. Further enhancing the camera's adaptibility to EFP is the new CCU-350 camera control unit. This portable CCU, in combination with the new BVP-50 and its special camera head adaptor CA-50, allows full remote control of this CCD camera with over 300 meters of a lightweight multicore cable. This new CCU-350 can also be used with the BVP-350 high-end pick-up tube portable production camera and thus allows integration of the new BVP-50 CCD camera into a total system of BVP-360 and BVP-350 cameras.

For further information: Sony Corp., 9 W. 57th St., New York, NY 10019, (212) 418-9427.

11-Cell Replacement Battery

Called the BP-1-11, Alexander Batteries is now assembling and distributing an 11-cell replacement for the Sony NP-1.

The eleventh cell means engineers can use today's video cameras and recorders longer because cameras and recorders will not operate after the battery discharges to 11 volts. This 11-volt point, called the cutoff point, is a perfect match for an 11-cell battery due to the fact batteries can only safely discharge to one volt per cell.

The new PB-1-11 is rated at 13.75 volts with a capacity of 1500 mAh when fully charged. The 13.75 starting voltage allows the video recorder or camera to pull all of the 1500 mAh capacity (or charge) out of the battery before the equipment cuts off or the battery falls to the 11-volt point (or one volt per cell).

For further information contact: Alexander Batteries, P.O. Box 1508, Mason City, IA 50401, Phone 1-800-247-1821.

Graphics Demo

Cubicomp brought distributed and parallel processing out of the laboratory and onto the floor of the Los Angeles Convention Center at the recent 129th SMPTE Technical Conference and Equipment Exhibit.

The company showed how their new line of Vertigo V2000 3-D computer graphics systems can do design, production and rendering tasks simultaneously, working together or as stand-alone workstations.

Three separate systems, a V2500 Production System and a V1100 Expansion Render Engine in the SMPTE show booth, and a V2500 system in a private demonstration area, were linked by a high-speed Ethernet network.

Using the Ethernet link, both systems accessed and shared the V1100 Render Engine. The V2000 software allows the work to be distributed automatically and transparently among the nine Render Accelerators™ in the V1100.

This parallel processing capability provides significant increases in productivity. In addition, a dedicated parallel processor manager ensures that all processors receive an equal workload. Should a failure occur, the workload is automatically and transparently reassigned. Production interruptions are either avoided entirely or kept to a minimum.

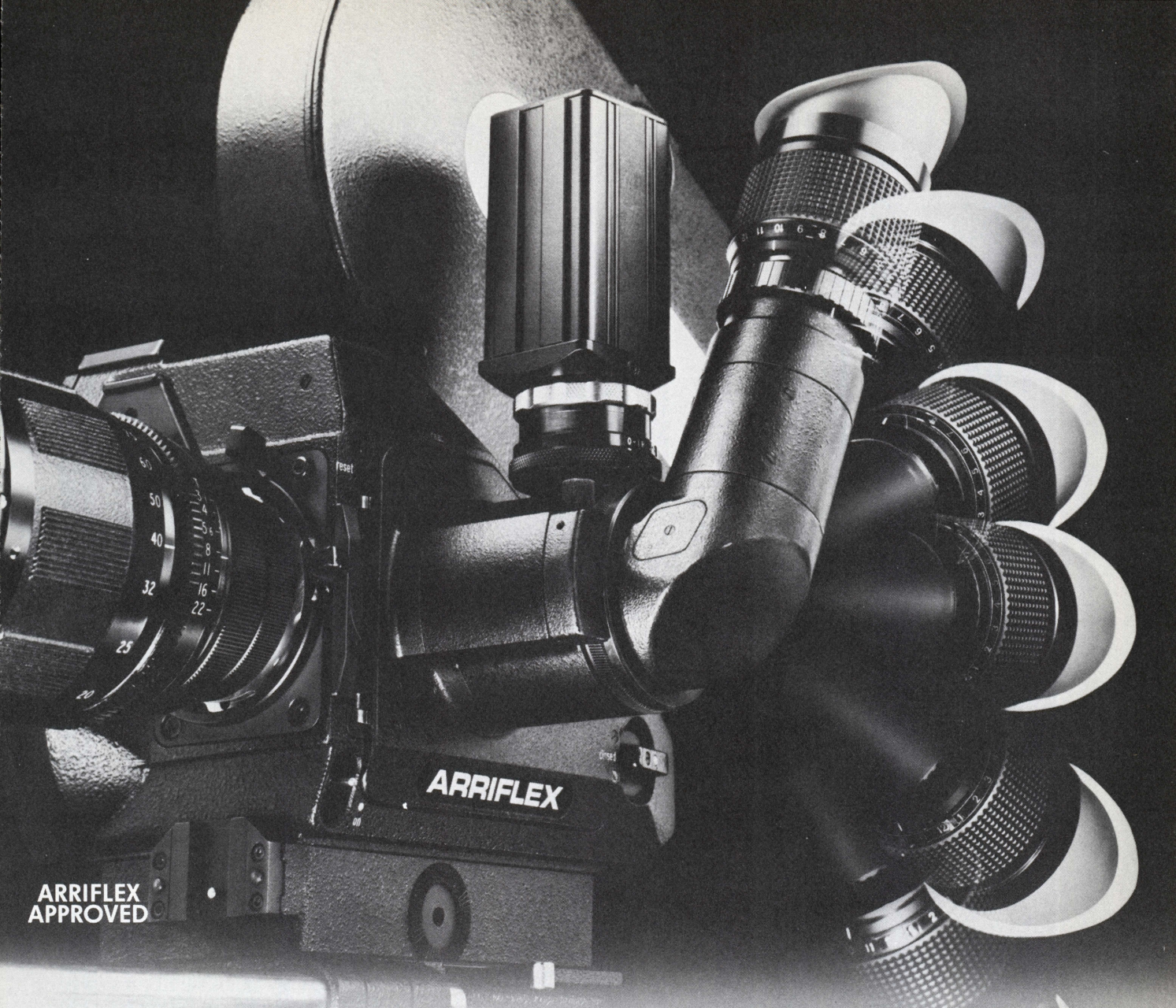
Each Vertigo V2000 system is a complete animation system composed of three separate and independently processing centers or "nodes" which perform design, processing and rendering. These transparently linked processing centers enable modeling, color design and rendering to be performed at the same time with no degradation or interference.

Cubicomp Corporation is a manufacturer of 3-D computer graphics and video animation products, located at 21325 Cabot Blvd., Hayward, CA 94545. Telephone: (415) 887-1300.

Orientable Video Door

Camera Service Center announces the availability of the CSC orientable video door for the Arriflex 35-3 MOS camera.

Greg Clapp, president of CSC,



THE CSC ORIENTABLE VIDEO DOOR FOR THE 35-3.

Camera Service Center designs and manufactures the *only* video tap modification for the ARRI 35-3 Orientable Viewfinder Door that's approved by Arriflex. We've designed it for camera people who need both high quality video *and* the versatility of the 35-3 Door's original design, plus:

- Retains the full 210° rotation of the original ARRI Door *without any interference.*
- Optimum image brightness to the video tap and eyepiece exit, minimal distortion and light loss.
- Easy adaptability to any video tap camera, Phillips, CEI, ARRI, the new CCD technology and to any new design that may come along in the future.

Our new 35-3 video door is now FOR SALE! It's available in two ways: send us your ARRI Orientable Door and we'll return it in only 4 weeks with the system built in with the camera of your choice; or you can buy the whole system, complete with new 35-3 door and video camera.

The CSC Orientable Video Door. Now available for immediate sale or rental at CSC. Distributed worldwide by Arriflex. Also available for sale or rental at Arnold & Richter, Munich, and Arriflex dealers and agents worldwide.

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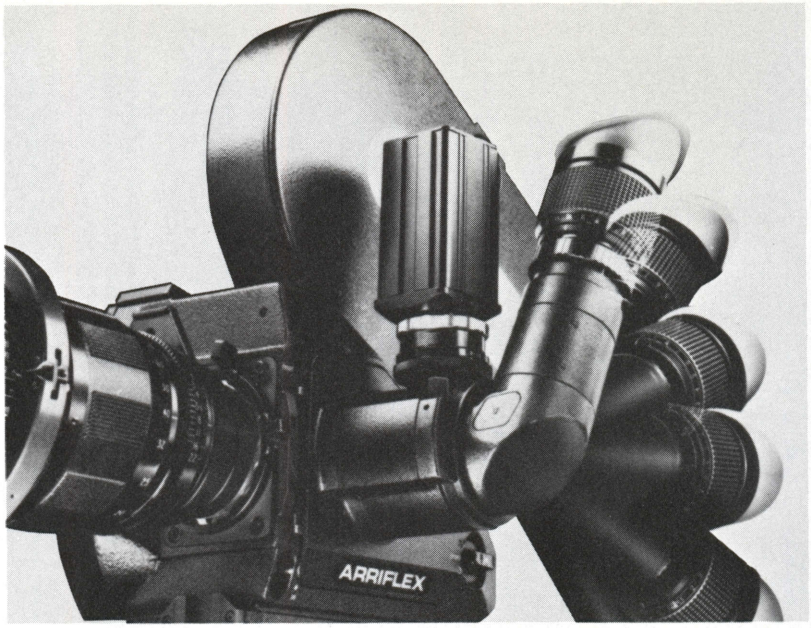

noted that "Cameramen kept asking us for a 35-3 camera video tap modification that wouldn't interfere with rotation. Well, there wasn't one, so we designed and built it ourselves."

A new CSC video door offers the versatility of the Arriflex original rotating door, plus optimum brightness to the video tap and eyepiece exit (with minimal distortion and light loss), and an easy adaptability to any video tap camera, from CEI to ARRI to any CCD design that may come in the future.

Camera Service Center's new orientable video door for the ARRI 35-3 is available for sale or rental at CSC now.

For more information: Camera Service Center, 625 West 54th Street, New York, NY 10019; (212) 757-0906.

New 60mm Lens

OpTex has added a 60mm f2.8 macro lens to their recently introduced range of 35mm format OpTex/Zeiss ECS lenses. Made from high quality Zeiss optics the lens focuses down to a ratio of 1:1 magnification.

Supplied with an Arri Bayonet mount, thus making it suitable for 16mm cameras, the lens can be adapted for Arri PL when an OpTex Arri Bayonet to Arri PL mount is used. A version to accept a BNCR mount will also be available.

The lens has the following specifications: focal length, 60mm; aperture f2.8; weight 670gms/1lb 7.5 ozs.

For more information: Optical & Textile Ltd. 22/26 Victoria Road, New Barnet, Herts., EN4 9PF, England Tel: 01-441 2199.

'Frame Grab' Announced

Aurora Systems announced at SMPTE, an optional real-time "frame grab" capability for the AU/220, the company's mid-priced full-color videographics system. The company also announced that the microcomputer-based system is now compatible with PAL and SECAM international television standards. The newly enhanced AU/220 is a powerful yet economical tool that enables artists to create videographic images for broadcast television, corporate communications, educational, training, and medical applications.

The AU/220 can exchange picture files with Aurora's full feature AU/280 system via Ethernet. The new enhancement enables the super-microcomputer-based AU/280 to support AU/220s as videographics workstations anywhere in the world.

Frame grab allows an artist to capture full color images from broadcast and other "live" sources, including video cameras and rolling tape. In its standard configu-

WINTER 1987\88

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35MM CAMERAS

ARRIFLEX 35BL III (BAYONET MT.) WITH 2-400' MAGAZINES, 4×4 MATTE BOX, MULTI PURPOSE BRIDGE PLATE, CABLE AND CASE. RECENT OVERHAUL, ONE YEAR WARRANTY*	$50,000.00
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ARRIFLEX IIC VIDEO ASSIST	2,500.00

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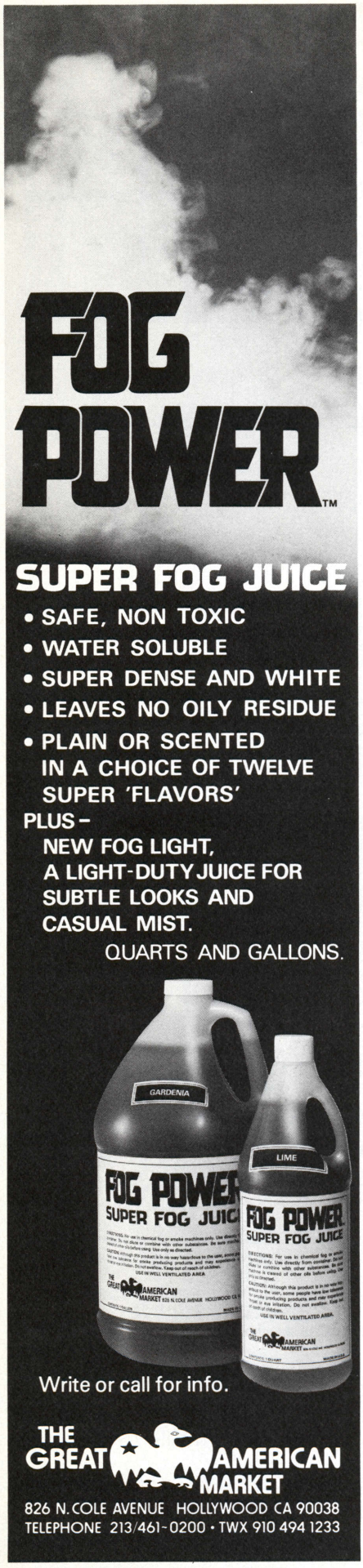
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ration, the AU/220 requires that the input image be still in order to scan the red, green, and blue components of the picture into its memory. The new frame grab enhancement enables the AU/220 to digitize a full color RGB image in 1/30th of a second. The frame grab enhancement to the AU/220 is available immediately.

The AU/220 is a full-color videographics system that enables artists to create, edit and manipulate smooth, anti-aliased images. The system features an electronic stylus and digitizing pad, a 16 million color palette, and optional cel animation and three-dimensional modeling capabilities.

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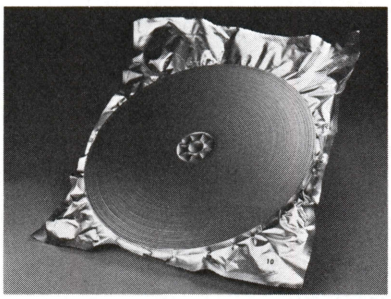
For further information: Aurora Systems, 311 Penobscot Drive, Redwood City, CA 94063, (415) 369-9400.



Multi-layer Laminate Package

Eastman Kodak Company introduced innovative packaging for its professional motion picture films at the 129th technical conference of SMPTE.

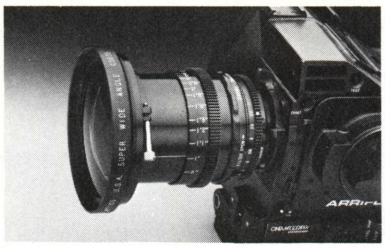
While it may not be totally apparent to the casual observer, these highly durable film packages incorporate very specialized vacuum packaging, metal and plastic technologies, and advanced construction techniques.

What is immediately apparent is the improved labeling. New label graphics make it easier for filmmakers to quickly identify the contents of packages, reducing the likelihood of selection mistakes.

For more information: Eastman Kodak, 343 State St., Rochester, NY 14650.

Wide Angle Adapter

Century Precision Optics is pleased to announce the availability of a



new accessory for the Kinoptik 9.8mm T/2.2. The Century Wide Angle Adapter is a high quality single glass element that will convert the 9.8mm lens to a 6.8mm lens!! Distortion is minimal while increasing the coverage of the lens by 30%.

For additional information contact: Century Precision Optics, 10713 Burbank Blvd., N. Hollywood, CA 91601, (818) 766-3715.

New Geared Head

Geared heads have been a staple technology in motion picture production for many years, contributing in part to the fluid movement so closely associated with the "film look." As films are being shot more and more on difficult locations, demands placed on geared heads have increased. To meet these new demands, Arriflex has introduced a new geared head that features new patented designs for its drive elements and guides, is compact, and most important, is stable within a wide range of temperatures.

The ARRI Geared Head drive system and guides are new. A patented, precision ground steel chain operates the tilt action which ensures smooth, slack-free action within a wide range of temperature extremes. Previous geared head tilt rail designs required lateral guides to maintain some sense of accuracy. In the patented design of the ARRI Geared Head however,

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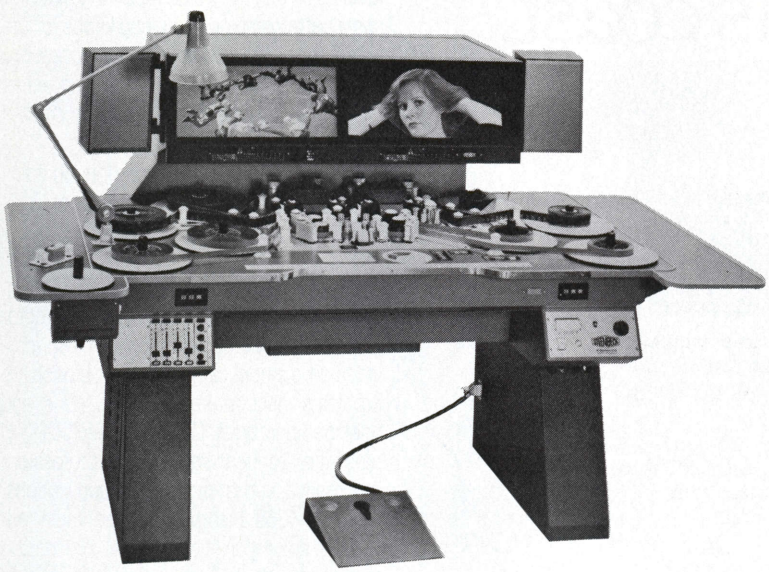

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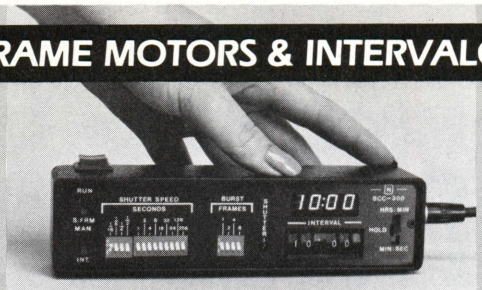

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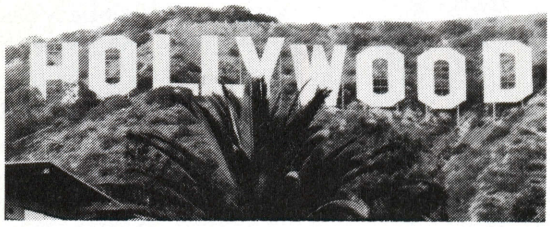

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the lateral guide is one of the rails itself, again ensuring accuracy over a wide temperature range. This design also distributes the head's weight evenly throughout the mechanism, eliminating the nicking, denting and flat spots on the rails caused during shipping and handling that affect the head's smooth ride.

The new ARRI Geared Head also has an operator feature that no other head has ever had: a laterally adjustable tilt wheel. This enables the operator to move the tilt wheel from its normal operating position to any outward position within a 38 degree radius. This allows the operator to select the most comfortable working angle, and permits cameras with rear mounted magazines to clear the tilt wheel in extreme upward tilt positions without having to add an additional riser.

Both tilt and pan incorporate individual positive lock-off brakes in addition to brake friction levers comfortably located within reach near the tilt and pan wheels. The head features three operating speeds each for tilt and pan, with neutral in between, plus an additional set of reduction gears for extremely slow operating speeds.

The ARRI Geared Head has a built-in removable, double hinged wedge-plate which enables the assistant to reverse camera tilt positions without removing the camera. It also features removable wheel handles, a bulls eye leveler, a mount for the leveling rod, battery side mounting plate for short battery cables, mounting knobs for the traditional camera assistant's accessory box, built-in carrying handles, and interchangeable use of "touch and go" or Arriflex bridgeplate mounting systems.

For more information contact: Arriflex Corporation, 500 Route 303, Blauvelt, NY 10913; (914) 353-1400.

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The CCS-4360 Color Corrector from FOR-A Corporation of America provides an economically effective solution for problems encountered in ENG, EFP and telecine operations. Designed specifically to meet the stringent standards of professional broadcast and production applications, the CCS-4360 incorporates the most advanced color correction signal processing technology to insure consistent, reliable performance.

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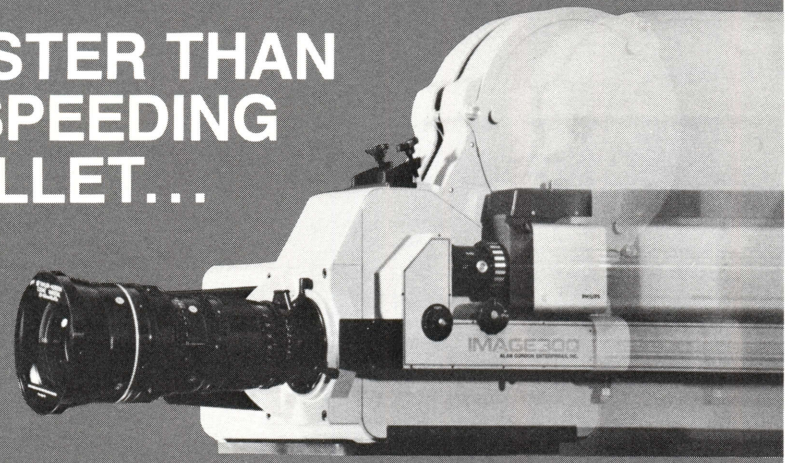

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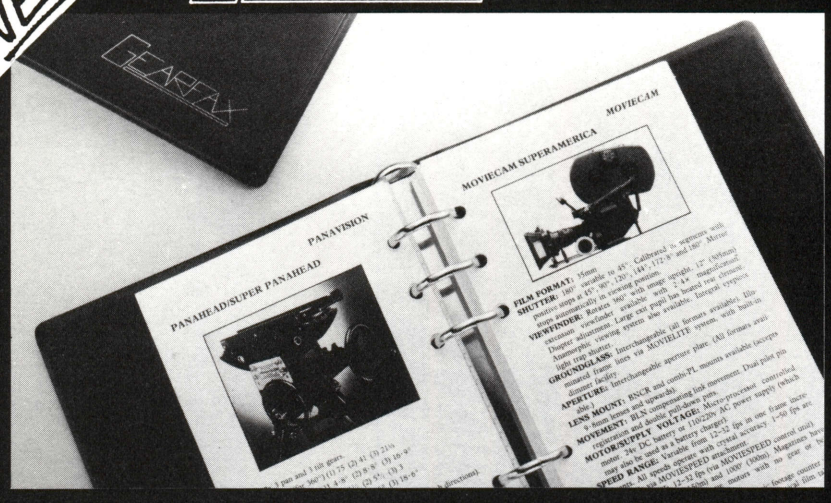

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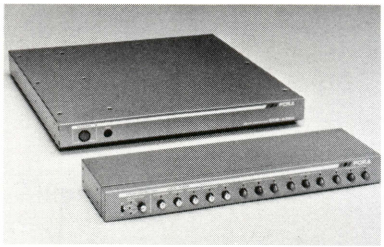

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Information is available from FOR-A Corporation of America, Nonantum Office Park, 320 Nevada Street, Newton, MA 02160. Telephone: (617) 244-3223.

Automatic Guided Vehicle

Elicon's latest motion control device, the roboGLIDE Automatic Guided Vehicle was displayed at its November SMPTE conference. This unique mechanism, which functions without the use of wheels, provides a moving platform for most dollys, pedestals or small cranes and roboGLIDE can achieve a level of smoothness significantly better than these traditional wheeled camera carriers. With an optional stepper interface, the servo driven roboGLIDE can be coupled to existing stepper driven motion control systems to increase the flexibility of a track-bound system.

Not restricted simply to motion control use, the roboGLIDE is a versatile tool which can be called into service as a dolly for non-computerized filming uses, as an automation device for TV studio camera pedestals, as a model mover or equipment mover all without the need to lay down any tracks. RoboGLIDE is capable of moving loads of up to 1500 pounds.

The quiet performance of the roboGLIDE makes it ideal for studio use. The proprietary drive system of the AGV also performs in such a way as to eliminate wear and tear of the floor surface. RoboGLIDE can move over concrete, linoleum or other smooth surfaces with ease. A battery pack option gives wireless flexibility for studio or location work.

For more information: Elicon, 9405 Leslie St., La Habra, CA 90631, (714) 870-6647.

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Letters

Film Degradation

In response to a letter (American Cinematographer, Oct. 1987) about film preservation:

Mr. Mitchell's film sample (which is Eastman Kodak film on cellulose triacetate support) and the powder were analyzed at Kodak Park to determine the cause of the deterioration. This film has undergone extensive degradation, apparently triggered by improper storage at high relative humidity and temperature. This type of support degradation can be expected in any manufacturer's cellulose triacetate support that has been subjected to improper storage.

Nuclear magnetic resonance analysis of the support showed a significant drop in acetyl content, which results in formation of acetic acid. This accounts for the acetic acid odor and corrosion of the storage containers. The powder consists primarily of calcium acetate – the calcium ions may have come from the water used for processing or from the floor.

The distortion in this film, the buckling emulsion, delamination, and dimensional changes are known consequences of improper storage and solvent loss from the support. As Mr. Mitchell notes, once degradation has been initiated it is not possible to arrest this reaction by storing a film at lower humidities and temperatures. These reactions are acid catalyzed and autocatalytic; hence recommended storage requirements should be followed to prevent degradation and to insure preservation of films.

To obtain the long life that is possible for these films, the following recommendations should be adhered to:

1. The guildelines specified in ANSI PH 1.43-1984 (ISO 5466-1980) "Practice for Storage of Processed Safety Photographic Film" should be maintained.
2. Cellulose triacetate films should not be stored for long term above the recommended temperature and relative humidity (21°C and 15–40% RH).
3. Films that have been stored under adverse or unknown storage conditions should be inspected on a periodic basis (every 2 years) to determine if they show signs of degradation.
4. Films showing degradation should be segregated, stored away from unaffected films, and copied as soon as possible on new safety base film.

A report in the September 1981 issue of *The Journal of Applied Photographic Engineering,* pages 160–167, concludes that acetate films can be expected to have acceptable physical properties for at least 300 years under recommended storage conditions.

—A. Tulsi Ram
James L. McCrea
Eastman Kodak, Rochester, NY

HDTV Processing

I was interested to read in the September 'American Cinematographer' the article by Nora Lee entitled 'HDTV The Artists Speak' especially the contribution by my friend Guiseppe Rotunno, ASC.

The laboratory process used in Rome would give better blacks and subtly mute the colour to obtain the desired result.

However, the record should be put right as this process, which involves the redevelopment of the film in a black and white solution after colour development, was first used by David Watkin on tests in the early sixties for the United Artists production *Charge of the Light Brigade* and later by Stanley Kubrick for a sequence in *Clockwork Orange.* Humphries Labs in London carried out this work, using two machines, which required a changeover after colour development.

Technicolor in Rome, very much later on, incorporated tanks and plumbing for doing the process on one run of the machine. Technicolor London and the Rank Film Labs at Denham are also in a position to do this and in fact several productions have now been given the treatment.

The first tests by Humphries included the capability of processing negative as well as positive in this matter but the negative process was given up due to the obvious handling hazards. As the results can be obtained at the print stage the negative can remain standard and produce both normal or silver retention prints.

—Les Ostinelli, BSC.,
London

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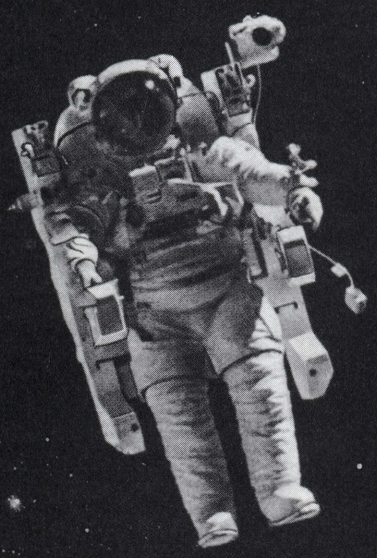

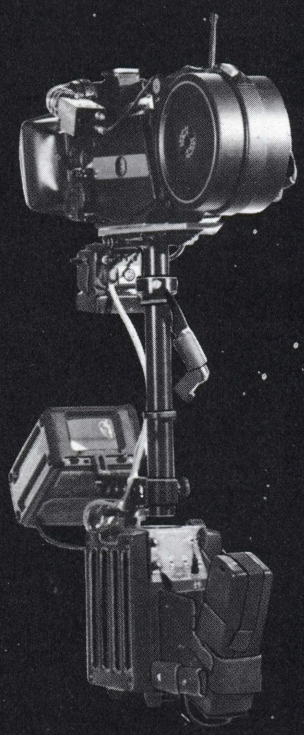

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Photos by David Mackay

Camera Crew on Coastline for *Russkies*

by Brian Sullivan

The struggle for the director of photography has always been to visually capture the screenwriter's words and the director's interpretation of those words. A mere sentence or paragraph in the script can require enormous amounts of time and energy to capture on film. For the adventure film *Russkies*, director of photography Reed Smoot was chosen to execute the demands of the script and its director Rick Rosenthal.

Russkies is the story of three boys and their relationship with a young sailor in the Russian navy. The sailor is stranded on the shores of Key West, Florida, after his life raft capsizes in a violent storm. The boys take the Russian "prisoner" and hold him in their fort for interrogation. Eventually the boys befriend the Russian and attempt to help him reach Cuba to escape the complications that arise in Key West.

Many of the script's more complex scenes take place on the ocean at night, and filming there presented Smoot and his crew with some unique challenges.

The Russian sailor, Mischa, and his ship are established early in the script during a serious storm:

> EXT – DECK OF THE TRAWLER – NIGHT
>
> Sailors prepare a large rubber raft. Even with safety lines it is all they can do to keep from being swept into the sea. *This is dangerous.*
>
> EXT – AT THE PROW – NIGHT
>
> One of the officers signals the shore with a flashlight. His face is tight with worry. The captain shakes his head, expecting disaster.

The filming of these two simple paragraphs required two nights, many tons of equipment, and over 150 people. Smoot recalls, "We had a full-sized Norwegian trawler that we had to create a storm around. It wasn't any model. We had to create the illusion that the trawler was pitching and listing in a violent rainstorm." Sometimes the camera was mounted on a plywood platform, and the motion of the ocean was achieved simply by rocking the platform with a crowbar. However, on the majority of storm shots the rolling sea-motion was imitated with a Steadicam operated by David Crone.

One of the difficulties of shooting a violent rain sequence on the ocean is the problem of grounding the generators to prevent electrical mishap. Rigging

gaffer Duncan McGregor solved the problem. Says McGregor, "Any light used in the rain sequences had an in-line ground-fault indicator. If the light's asbestos insulator got wet and shorted out, it would trip the ground-fault indicator. For lights that couldn't be fused, we made up pigtail sockets with 20 amp fuses. We grounded our systems to the boats and the boats to the ocean. Each boat had a zinc plate suspended two feet below the hull, attracting the electrolysis and protecting the hull's surface."

During this storm sequence the script calls for the Russian trawler to signal a comrade on shore. The point-of-view shot from the trawler to the signal light on shore was particularly challenging for Smoot and his crew. The shot encompassed far too much shoreline to attempt to light. Consequently, the shot had to be filmed at dusk and altered to give the appearance of night. Director Rick Rosenthal recalls: "That particular shot was needed to create a point of view for the Russians on the water looking for a place to land on shore. In order to create a little bit of relief so that viewers can see what the shore really looks like, we needed to shoot just at the magic hour to achieve definition in the tree line. At the same time, we didn't want the sky and the water to be too bright. We used neutral-density graduated filters on the top and bottom of the frame, leaving a clear strip for the shoreline in the middle."

The conclusion of *Russkies* called for another difficult sequence to be filmed on the ocean at night. After a high-speed chase, three motorboats confront one another on the open seas. The families of the three boys are in the first boat. Mischa and two of the three boys are held captive by two bumbling Russian sailors in the second boat. A Rambo-minded sergeant and two roughnecks are in the third boat. The third boy flies overhead with a rocket belt or "jetpack" and is shot down, plunging into the sea.

Above: ***Light for Russkies had to be matched over course of 11 shooting days at sea. Grip Tracy Neftzer on shoulders of Jim Earley, with help from Rick Allen, set silks while Smoot and Dennis Peterson check balance. On her mark is actress Susan Walters.*** **Left:** ***Steadicam operator David Crone prepares for an ocean drive-by. From left, Rosenthal, David Land and actors Leaf Phoenix, Peter Billingsley and Stefan DeSalle.***

Smoot describes the sequence, "Well, we knew from the beginning that the most difficult aspect of the film was going to be the last 20 pages of the script, the finale of the story in which every main character in the entire film is assembled in boats on the ocean at night.

"In the original script the end of the film all took place in the morning. I got a call from Rick one night and he said, 'It seems to me this would be a lot more dramatic if we played the whole finale at night.'"

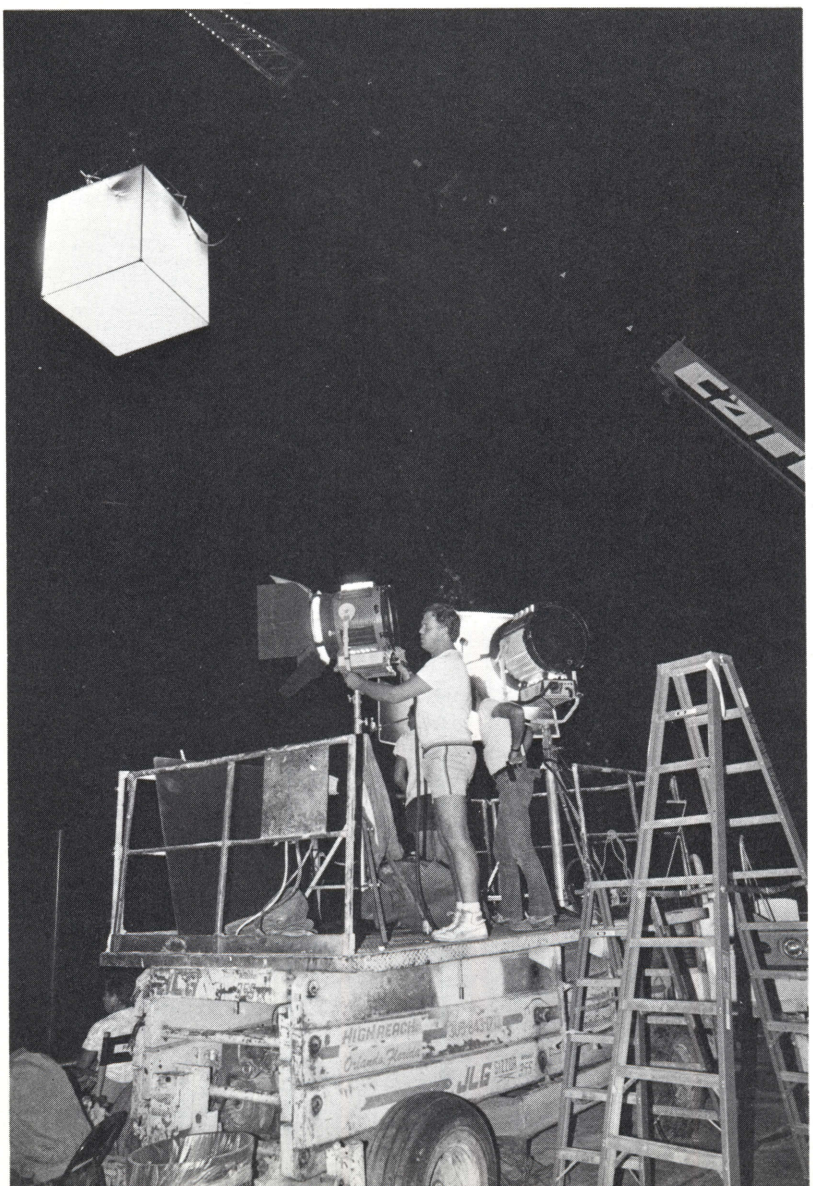
As Rosenthal later put it, "I chose to film the finale at night for two reasons. One, I felt that flying the jetpack would really look bad during the daytime, very vulnerable. The double wouldn't match the actor and you'd see wires. It just made me very uncomfortable. Secondly, I felt that there was a lot more mystery at night, more tension and danger."

If the finale of the picture wasn't already complicated enough, leave it to the script to add just a couple more sentences:

EXT – OCEAN – NIGHT

A periscope pierces the surface about 100 feet off the bow, rising fast. The roar becomes deafening.

A conning tower breaks the surface. Water rolls off it like Niagara. A red star is emblazoned on its side.



Top: ***Smoot takes meter reading off actors Vojo Boric and Vic Polizos. Also aboard are gaffer Peterson, Louis Race, Land and Rosenthal behind the camera.***
Right: ***Rigging gaffer Duncan McGregor sets lights to supplement the 48k 'moon' overhead.***

Three boats, 16 main characters, and a full-scale Russian submarine crawling with sailors, at night, in the middle of the sea. Smoot details what were his concerns: "We had the space of four football fields of ocean to light. This all takes place in the middle of nowhere, which meant it wasn't near the shore or anything that would explain an ambient light. We decided the moon would be the ambient light that would give us reflections and kicks in the water as well as a horizon line on the ocean, otherwise the water would be black and people would be floating in black space. We designed a special effects full moon matte shot to plant in the mind of the audience the presence of a strong moonlight ambience."

Gaffer Dennis Peterson worked with Smoot to develop a light that could imitate the moon over such a large area. Says Peterson, "I had a conversation with John Dillard from Vancouver. He had designed and built a light under similar circumstances for a picture called *Backfire*. His light employed four 4k HMI lights. Ours would have to be much bigger. John, Duncan, and I designed a 10' x 10' cube with a Newrail superstructure. On the top of the cube, a grid structure was designed to support four 12k LTM HMI lights. I had a sailmaker in Key West make us a bag to cover five sides of the cube, leaving the top open. I dyed the sailcloth material to bring the color of the LTM HMI light closer to tungsten. Both Reed and I prefer a moonlight color closer to white than to the conventional blue moonlight."

The cube or "moon" was raised above the ocean each night by a crane with a reach of 150 feet. It's an impressive sight once extended. On some nights the moon cube was mistaken for a UFO by passing boats and aircraft.

The crane's weight capacity was 1600 lbs. The crane

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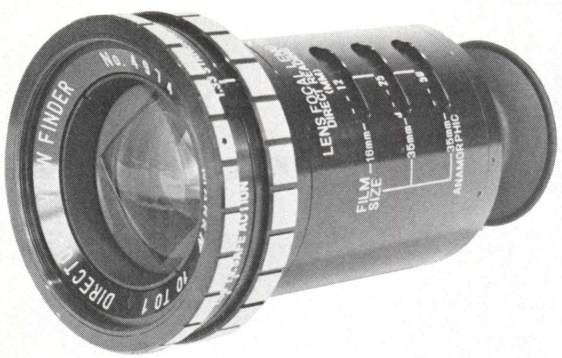

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was driven onto a giant barge nicknamed "Movie Island." According to Smoot, "The entire company had to be located at sea for 11 work days. It became very important to bring in some marine coordinators to help us organize. As it turned out, we got Moby Griffin and his team. He does an intensive amount of salvage work and has some huge barges. One was large enough that we actually were able to house the entire company on it, all of our trucks, and the honey wagon. It was basically our working platform. In addition we had a "spud" barge that allowed us a mobile camera platform and a couple of tugboats for additional 12k LTM HMI lights."

The cube light turned out to have two advantages beyond its excellent quality of soft light over an expansive area. First, the cube is transportable; it's constructed of Newrail (a collapsible tubing familiar to most film crews). Its sailcloth bag can be folded and stored on the truck with the lights. Secondly, the cube allowed the company to move fairly fast through the night work. Notes Rosenthal, "We scheduled the ocean work for 11 days. We were told by all the experts, including the marine coordinator, that we were crazy; that it couldn't be done in 11 days. The reality of it was we made the schedule, even with a sunset re-shoot."

Russkies is scheduled for a nationwide release on November 6, 1987. Director Rick Rosenthal and Director of Photography Reed Smoot have moved on to new scripts and new struggles to capture the screenwriter's words on film. Perhaps when all is said and done, only two words of a screenplay can be considered simple to execute: The End. △

The author was first assistant cameraman on Russkies.

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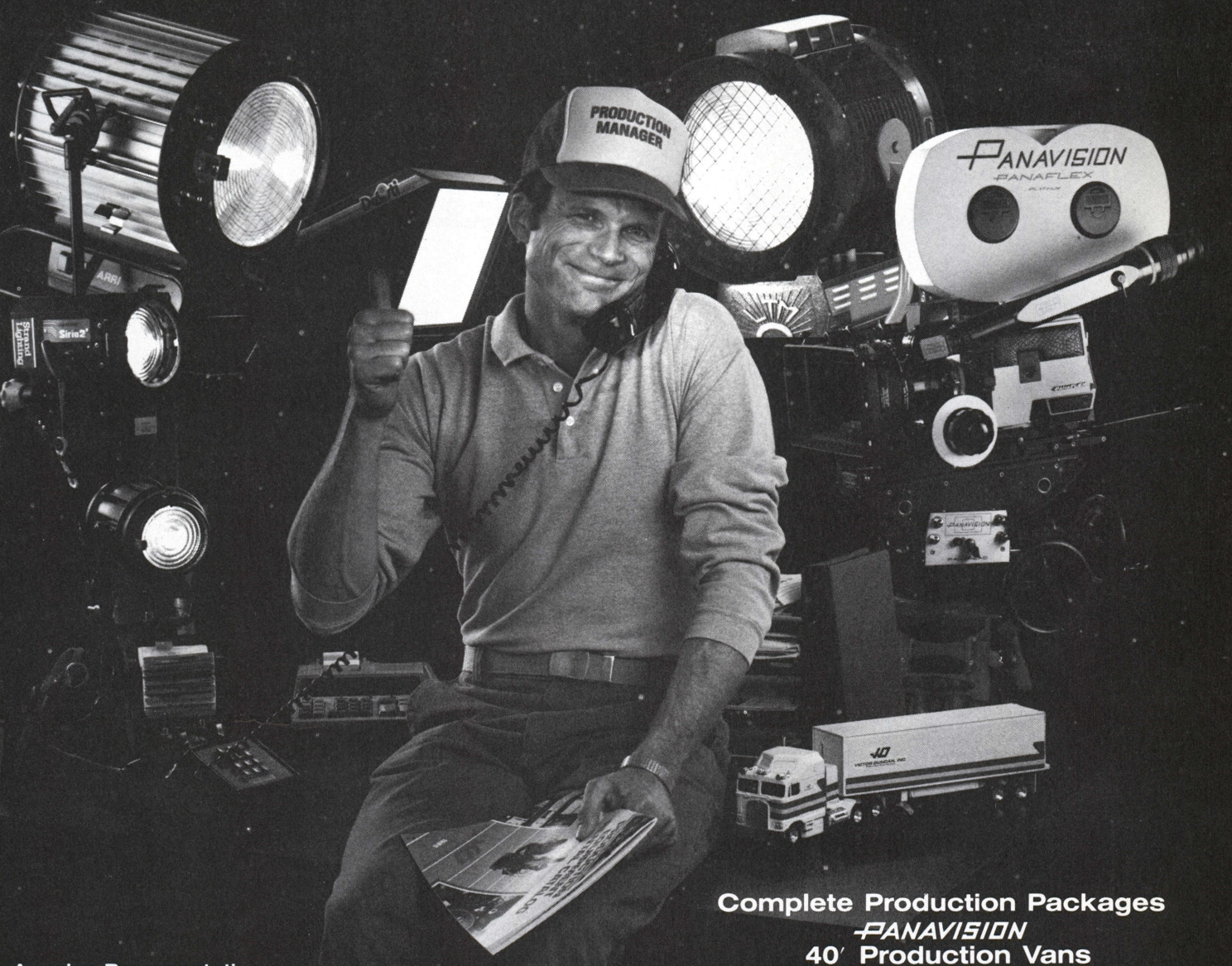

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"Any place, any time" was the motto of Western Electric's roadshowmen, whose vans carried 35mm projection equipment and films to schools, auditoriums, grange halls, dealer showrooms and church halls.

Illustrations courtesy of AT&T Historical Archives

Pioneering the Talkies

by Robert Finehout

While *The Jazz Singer* has been memorialized as the film that proved the movies could talk – aided and abetted by Al Jolson's show-stopping songs, ad-libs and ringing affirmation, "You ain't heard nothin' yet" – an all but forgotten industrial can lay claim to have gotten to Broadway first. Three-and-a-half years before the triumphant triumvirate of Bell Telephone Labs, Western Electric and Warner Brothers gave voice to the dream in 1927, the Hotel Astor on Times Square bespoke of audio wonders soon to come.

The picture was called *Hawthorne* and was presented by Western Electric engineer Edward Craft, to a gathering of fellow executives on February 13, 1924. In actuality it was a public relations film made at the company's suburban Chicago manufacturing plant – site of the famous Hawthorne experiment in industrial psychology. According to sources it "employed a perfectly synchronized sound track," utilizing a Bell Labs sound-on-disc system that would one day bear the proud name "Vitaphone." Another contender for first sound industrial was *Audion,* an animated cartoon, originally created as a silent, but shown with a synchronized score by Craft, at Yale University's Woolsey Hall in 1922. *Hawthorne,* however, was conceived as a talking picture and it did get to play The Great White Way, if only for a one-night engagement.

While Bell Labs and Western Electric were the big players in the conversion of the motion picture industry from a silent to sound medium of entertainment, the idea was hardly new. Edison's invention of the phonograph in 1877 was the seed that spawned the idea of linking sound to moving pictures for decades to come. Most attempts at uniting the two technologies were lamentable, often laughable, and usually of brief

duration. The problem was not just the inherent one of keeping picture and sound in sync but of providing a means of amplification. Elaborate phonograph horns were rigged up in theaters and other showplaces but the screechy sounds reached only those seated – fortunately or unfortunately, depending upon your audio sensitivities – in the first few rows.

Dr. Lee De Forest, inventor of the audion tube in 1907, many historians feel, should be judged the Father of Talking Pictures. His audion provided the means to amplify electrical current and his experiments in photographing sound led to the sound-on-film principle that became – and still is – the standard throughout the world. If De Forest is not a household word the fault lies partly with him. He had neither the means (financial) or show biz smarts to exploit his Phonofilm. It took the likes of Bell Labs, Western Electric, Warner Brothers and William Fox – whose Movietone, developed by Theodore Case and E. I. Sponable, was almost a dead ringer for De Forest's system – to bring the talkies to market. And it took a Winter Garden headliner, at that, to prove that people wanted dialogue and not just musical accompaniment when they went to the movies.

Interestingly, *Hawthorne* in 1924 pointed the direction the movies would eventually take, with its spoken sound. There were, however, a few detours along the way.

One of the events that momentarily sidetracked development of *talking* pictures was Warner Bros.' *Don Juan,* a sumptuous, sensuous swashbuckler. It was beautifully photographed by Byron Haskin, ASC, but there was only one problem: The picture was filmed as a silent. As an afterthought Warners decided to add music to demonstrate to all the Vitaphone sound-on-disk system. Warners had acquired exclusive rights to the process from Western Electric, manufacturing and marketing arm of AT&T. Aside from some early experimental shorts and *Hawthorne,* there was little awareness of the breakthrough about to happen.

Warners and the engineers of Western Electric and Bell Labs, saw Vitaphone as a way for theaters to have full orchestral accompaniment to movies, instead of relying on house bands, Wurlitzers and piano players to provide the musical atmospherics. Also, it was reasoned, top entertainers could now make "personal" appearances, through Vitaphone, in even the smallest houses.

A promotional booklet issued by The Vitaphone Corporation rhapsodized that Vitaphone would make available "the music of the most popular stars of the operatic, concert and musical comedy fields." *Don Juan,* seen today (in a superb restoration by Art Shifrin, a musicologist, sound engineer and film historian), sounds just great. The 107-piece New York Philharmonic Orchestra provides a fullness that few, if any, theaters could have achieved with small house orchestras.

Ironically, on the same program with *Don Juan,* at its premiere showings in New York and Los Angeles, was a one-reel spoken introduction by Will Hays, president of the Motion Picture Producers and Distributors of America. He, too, extolled Vitaphone as a "most potent factor in the development of a national appreciation of good music," adding "The art of the vocalist and instrumentalist is ephemeral . . . Now neither the artist nor his art will die." No mention of the actor as artist or the potential imperishability of, say, the works of Shakespeare on the talking screen.

If Hays couldn't see beyond his own words neither could the public – then. It would take Al Jolson – candidly captured by cinematographer Hal Mohr, ASC – improvising some dialogue between verses of "Blue Skies" in *The Jazz Singer* to change the movies and communications forever.

Although the industry initially turned a deaf ear to Vitaphone – why pay Warners royalties?, the Big Three studios reasoned – the simultaneous development of Fox Movietone sent sound waves through the industry. Western Electric, sensing a revolution in the making, terminated its contract with Warners, freeing it to offer all studios and theaters both systems. Its licensing, installation and distribution arm, Electrical Research Products, Inc. (ERPI), hit the road running.

If Hollywood was at first skittish about talkies, business and education quickly saw it as a medium to train, sell and teach. Recognizing this potential, ERPI formed a non-theatrical division in 1929.

Sioux City, Iowa
St. Paul, Minn.
Omaha
Oklahoma City
Ft. Worth
New York
Chicago(2)
St. Joseph
Kansas City
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Makes personal appearance in 10 cities at once
President White of Armour & Co. seen and heard in Talking Pictures
Now the busy business man can send his talking picture to distant conventions. A screen talk by F. Edson White, President of Armour & Company was seen and heard at eleven executive meetings all at the same time. "It worked to the height of perfection," Mr. White writes.
Talking Pictures are vivid and realistic. They will make a human and valuable record of personalities and events in your company; they will teach your personnel methods and processes in a manner more understandable and absorbing than was ever before possible through any mechanical medium. They will give your public a compelling story of what is back of your business and how your product is made.
Western Electric, the makers of the nation's telephones, now offers business men portable talking picture equipment which assures clear and life-like sound reproduction. Use the coupon below. Send for further data. Better yet, see and hear an actual demonstration of industrial Talking Pictures at a nearby office of Electrical Research Products Inc., distributors of the equipment.
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PORTABLE TALKING PICTURE EQUIPMENT
Electrical Research Products Inc.
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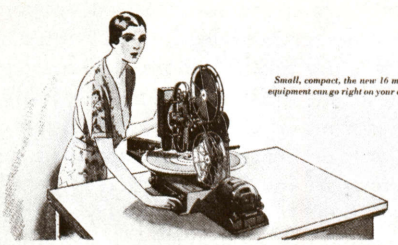
Gentlemen:
Please send booklet telling how I can use Talking Pictures.
Name
Address
Publication Date
Nation's Business June, 1930
Time June 16, 1930
Advertising & Selling April, 16, 1930
Business Week April 23, 1930
Publication Date
Class & Industrial Marketing May, 1930
Printers Ink Monthly May, 1930
Sales Management April 26, 1930

The genesis of the satellite teleconference? Fifty-seven years ago this man addressed executives in 10 distant cities simultaneously.

Before the introduction of 16mm sound-on-film in 1933, Western Electric attempted to bring talkies to the classroom with this 1931 sound-on-disc model, a short-lived throwback to Vitaphone. Opposite page: Lloyd Hamilton in* Service Wins Again *was advertised as the "first industrial talking picture comedy" in 1930. Hamilton was a well known comedian.



Electrical Research Products announces a **16 mm.**

Western Electric Sound System

TALKING PICTURES FOR THE CLASSROOM: Now, with the new 16 mm. equipment, educational talking pictures—which facilitate and enrich learning—may be shown in any classroom. Set-up in a few minutes, easily operated by the teacher, the 16 mm. is always ready for action.

Easily carried from room to room

FOR THE SMALL BUDGET: The low cost of this apparatus fits the budget of even the smallest school—and enables larger schools to use not just one but a number of equipments. Lower cost of educational talking pictures on 16 mm. film still further reduces expenditures.

WESTERN ELECTRIC QUALITY: The 16 mm. equipment brings quality reproduction of talking pictures to the individual classroom. It achieves the same lifelike reproduction of sound and scene as the Western Electric equipment in 8,000 theatres throughout the world. Into the 16 mm. equipment has gone the same quality of design, material and workmanship that has made Western Electric the standard.

THE PERFECT COMBINATION: The educational talking pictures offered by Electrical Research Products and the new 16 mm. Western Electric Sound System are a perfect combination. Used to supplement regular teaching methods, they intensify and vitalize instruction, bringing a new teaching tool to the field of education.

Department of Educational Talking Pictures,
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EDUCATIONAL TALKING PICTURE EQUIPMENT

ELECTRICAL RESEARCH PRODUCTS, INC.
250 West 57th Street, New York, N. Y.
Gentlemen—Please send me further information on the new 16 mm. equipment. Also on educational talking pictures, and how I can use them.
NAME .....
ADDRESS .....
CITY ..... STATE .....

Publication	*Date*
American School Board Jn'l.	—September, 1931
Nation's Schools	—August, 1931
Educational Screen	—September, 1931
Jn'l Nat'l Ed. Ass'n	—September, 1931

John E. Otterson, president of ERPI, in an address before a gathering of business leaders in December, 1928, prophesied that talking pictures would find uses "in many fields other than that of entertainment." A disciplined, forceful exponent of the new communications, this Annapolis graduate and career Naval officer was not given to flights of hyperbole. In June of 1929 he brought the message to the National Electric Light Association in Atlantic City. There in the Western Electric Sound Picture Theater exhibit, ERPI engineers and salesmen continuously showed industrial films over a five-day period. According to *The Erpigram*, Western Electric's employee newspaper, the purpose was to show "what sound could do for industry." Among the attractions was a four-reel sound-on-film (Fox Case system) industrial from the Studebaker Motor Co.

The most memorable moment came when Thomas Edison, seated in a rocking chair in his Florida garden, flashed on the screen. As "his voice filled the great auditorim the entire audience rose and gave a rousing ovation to the famous inventor," *Erpigram* exulted, overlooking the fact that Edison was far from convinced that talking pictures had a future. He had said, "Without great improvements people will tire of them. Talking is no substitute for (the) good acting that we have had in the silent pictures." Ever promotion-minded, all speeches and highlights of the trade show were recorded by ERPI, "thus marking another use for talking pictures in industry." And thus presaging videotaping of conferences by at least 50 years!

During these early years 35mm was the only format available to either education or industry. Western Electric – maybe *eclectic* would be better – provided the sound-on-film reproducers for existing non-theatrical equipment (Simplex, Powers etc.) as well as a line of projectors for non-equipped situations. Euphorically called "portable," the projectors came in "five sturdy trunks each housing one or more units of the equipment." A major breakthrough, called by ERPI "a forerunner in revolutionizing formal educational practices," took place at Teachers' College, Columbia University, in July of 1929. Public school teachers and administrators saw and heard an animated Western Electric cartoon, *Finding His Voice*, that explained what made the movies talk and served to demonstrate the projection equipment as well. President Herbert Hoover, Benito Mussolini and Bernard Shaw – a bizarrely disparate assemblage if there ever was one – spoke to the educators via 35mm sound-on-film appearances. These demonstrations and others throughout the country would "spread the doctrine of talkies." Somewhat patronizingly, ERPI predicted: "In the near future the noses of hundreds of thousands of unwilling little ones – and older ones – will be lifted out of dull textbooks and talkies will be a regular part of the school's curriculum."

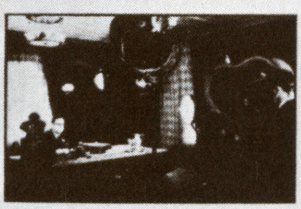
It was increasingly acknowledged that the 35mm behemoths were a tough sell. To demonstrate its equipment and, more importantly, to make possible a practical means of coping with industry's growing involvement in sales and advertising films, ERPI established a Road Show Department. Showings by ERPI operators were scheduled in 45 cities for an industrial film client, United States Rubber Company, starting in January, 1930. The projector-equipped road showmen would sweep across the country, taking off from Los Angeles and winding up in New York City, following the golf season from West To East. The films? *Pros, Players and Profits* and *The Inside Story of the Golf Ball*, which speak for themselves.

The 16mm silent projector, introduced in 1923, was well established as a classroom and business teaching tool. Unfortunately it couldn't be adapted for sound. ERPI's Department of Educational Talking Pictures brought to market a strange 16mm hybrid that combined film and disc – a throwback to Vitaphone? – in a vain attempt that was dubbed "The Perfect Combination . . . that will intensify and vitalize instruction." History does not record much of the results of this fanciful footnote to the sound film revolution.

It is said that the more things change the more they stay the same. The teleconference, a phenomenon of the satellite age, may have had its genesis some five decades earlier. F. Edson White, the president of Armour and Company, and some enterprising en-

Hitching a sales story to a star!!

First *industrial talking picture comedy gives dealer an effective sales lesson . . . .*



Through a screen talk, President Fuller of Richfield gets into personal contact with thousands of dealers he could not otherwise reach.

The popularity of screen stars . . . the fascination and proven selling-force of the talking picture . . . these have been combined by the Richfield Oil Company in their recent comedy "Service Wins Again" with Lloyd Hamilton and Eddie Baker. This effective sales message is reaching thousands of filling station men, dealers, and distributors throughout the country, and is teaching the value of Richfield service.

Metropolitan Sound Studios, licensees of Electrical Research Products, Inc., produced this action story, using the Western Electric Sound System in the recording.

Your business message can be given in a talking picture story—in a way that grips attention from beginning to end. Let us tell you how we can help you use this medium. Send along the coupon.

Special showings of the Richfield picture are arranged at local theatres. Dealers and distributors are invited for 11 P. M. just after the regular show. The audience is invited to remain and see it, too.

ELECTRICAL RESEARCH PRODUCTS, INC.
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Gentlemen: Please send information as to how I can use Talking Pictures.

Name .....

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PORTABLE TALKING PICTURE EQUIPMENT

Publication	*Issue*
Business Week	*July 23, 1930*
Sales Management	*August 16, 1930*
Time	*August 4, 1930*
Printers' Ink Monthly	*August, 1930*
Class & Industrial Marketing	*September, 1930*
Advertising and Selling	*September 17, 1930*

ERPI's industrial roadshow division took pages in business publications to sell advertisers on the importance of talking pictures.

"I'm no Barnum" *"I'm no Edison"* *"I'm just a tire salesman"* *"That's why I'm glad my company uses Modern Talking Picture Service"*

This service relieves your organization of all details of *booking, promoting and exhibiting* your Talking Pictures

Four years' experience stands back of it

Modern Talking Picture Service is a thoroughly tested system for giving a wide consumer or dealer circulation to advertisers' pictures. It enables you to show your picture to prospects anywhere in the country—at any time you wish—and to get their undivided attention for an hour or more.

MERCHANDISED SHOWINGS...

Modern Talking Picture Service takes care of all necessary advance arrangements.

The day of the show, a truck drives to the auditorium. Skilled crews set up their Western Electric projection equipment—put on your picture in a professional way that gets your story over dramatically to eye and ear—leaves a lasting impression on all who see it.

At invited consumer shows, all tickets *must be signed* before the bearers are admitted—which builds up the finest kind of prospect list for your local dealers to follow up!

Or your message can be presented to clubs and the attendance checked by a club official, as well as counter-checked by the operator.

Among well-known users of Modern Talking Picture Service

Many leading advertisers have seen the tremendous possibilities in the talking picture medium now that there is a way to get wide distribution and expert presentation. Thousands of shows have already been put on for them, with far more satisfactory results than were ever before obtained.

Mail the coupon asking a representative to call. He will gladly help you with any problem of getting distribution for an industrial picture.

MODERN TALKING PICTURE SERVICE — ANY PLACE — ANY TIME

Operated by Electrical Research Products, Inc.

250 West 57th Street, New York, N. Y.

Units traveling out of all key cities.

Modern Talking Picture Service
250 West 57th Street, New York, N.Y.
Gentlemen: I want to hear more about your service. Please send a representative. *(Write your name and address in the margin)*

Job 55284C

Advertising Age July 1, 1935

gineers of ERPI may actually have upstaged extraterrestrial science.

On the evening of January 24, 1930, President White addressed Armour officials – simultaneously in 10 distant cities. Promptly at 9 o'clock the lights went out in hotel ballrooms and auditoriums where the Armour folks were gathered. To their surprise White appeared, much bigger than life, gavelled them to order and went into his spiel. White watched himself, exactly as the others did, from the Palmer House in Chicago. A figment of *Twilight Zone?* No. White, nothing if not a bit of a showman, had been photographed days before on a Fox Case sound-on-film camera. ERPI's portable projectors in the 10 cities did the rest, on cue.

As theater owners discovered in the early days of the movies: to insure a flow of product you've got to create the product. So, too, did ERPI. To sell education on the need for talking pictures, ERPI, through its Educational Talking Pictures Department, began producing classroom films, "a new medium for curriculum enrichment." Working with academic consultants, ERPI produced films on teacher training, natural sciences, vocational guidance, phys ed, math and music, one of which, *The Symphony Orchestra and Its Instruments,* became an early classroom classic that played in schools long after the advent of the 16mm sound projector in 1933.

If Ma Bell took comfort in the indisputable fact that she was the only telephonic game in town, her bumptious offspring ERPI was anything but restrained. Theatrical trade ads warned theater owners that the miscreants that had mistakenly installed non-Western Electric sound systems were yanking them out in record numbers. Why? "Because of loss of business due to poor reproducton . . . lack of proper servicing . . . program interruptions. Install Western Electric in the first place – it costs less in the long run," exhibitors were reminded.

ERPI's ads in business publications proclaimed "Talking Pictures – the 1930 tool of industry." School administrators were asked: "Are talking pictures in your blueprints?" Followed by the subtle warning, "Communities today have vital interest in their instruction centers. They demand every up-to-date teacher's aid."

An item in the May 15, *Erpigram,* headlined "Schoolroom of the Future," pictured the auditorium of the San Diego Senior High School lined with rows of student desks where seats would normally be. Upfront, a large motion picture screen. Blackboards begone.

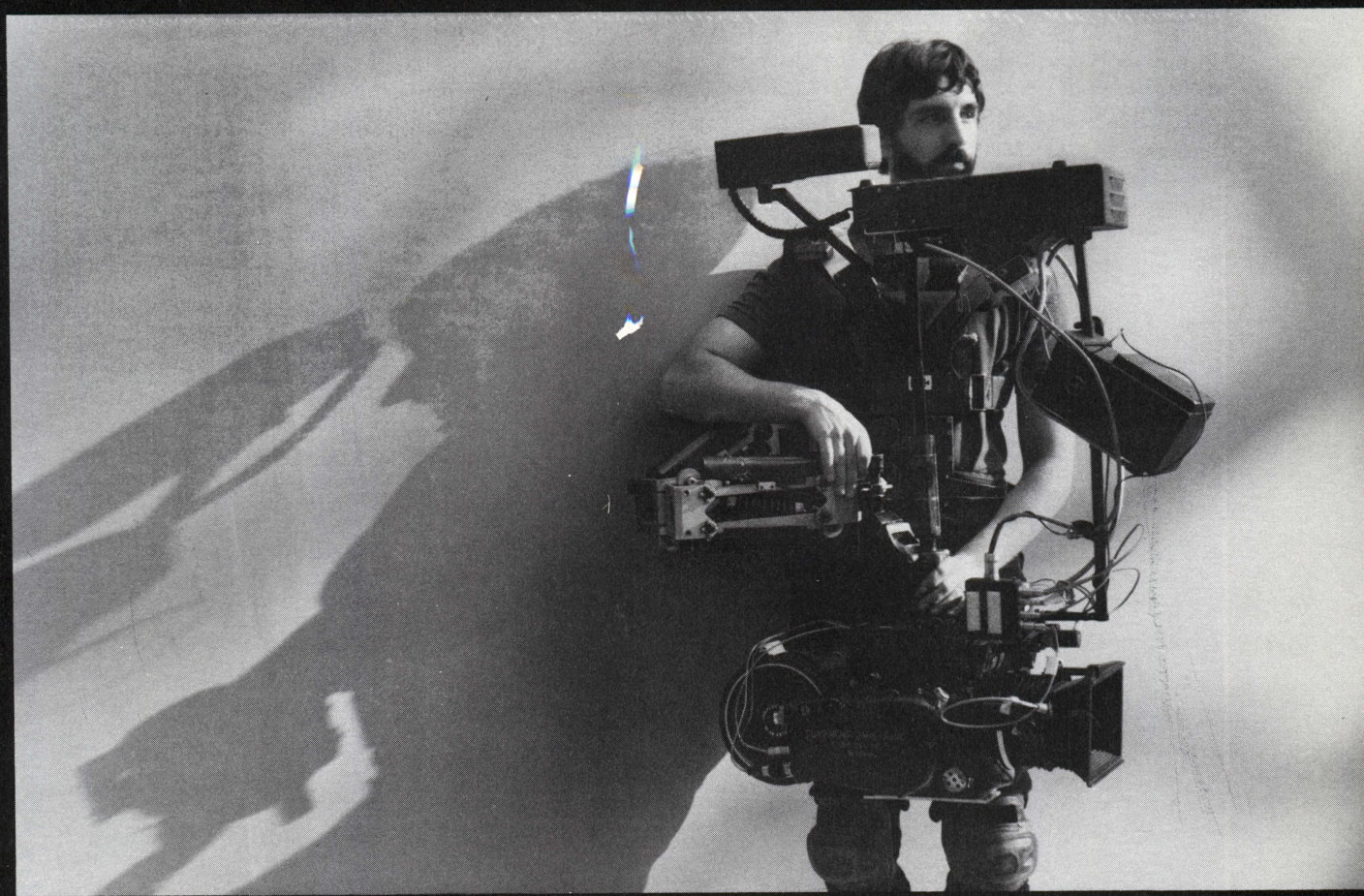
The shoemaker's children may have gone barefoot, but Western Electric's parent, AT&T, heard its own message and produced a film to teach its salesmen how to sell directory space. *Adding Directory Ads,* produced by Paramount Business Pictures, Inc., was claimed to have been "the first effort at sales training by means of talkies." How appropriate that it should have come from Ma Bell.

These were the formative years when talking pictures were finding their voice. Within three years of Al Jolson's prophetic boast, theaters had either wired for sound or were shuttered. The silents had been crushed.

Of equal importance was the contribution of talking pictures to education and commerce. It was the dawning of the communications age. ERPI's roadshowmen – who would one day operate under the banner of Modern Talking Picture Service – made their appointed rounds in vans equipped with "sturdy trunks" containing 35mm wherewithal to put on the show, "any place, any time." In time, the 16mm sound projector would become ubiquitous in schools, clubs, and community organizations. Truly portable and not much heavier than a traveling man's sample case, it would turn a boardroom or clubroom or classroom into a small theater – the better to sell a product, present an idea or teach a lesson.

A few decades later the delivery system would change again. VCRs would have equal footing and – some say – will eventually displace 16mm projectors. Satellite distribution of educational and industrial messages makes the Armour Company's innovative attempt at communicating in 10 cities a thing as primitive as cave drawings. Let's remember, however, that so far all we've done is to change the delivery systems. We're still talking about *talking pictures.* △

Robert Finehout is president of Modern Talking Pictures Service, Inc., in New York City.



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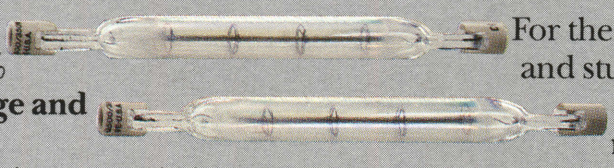

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Empire of the Sun—an Exotic Journey

by Dale Kutzera

Produced by Kathleen Kennedy, Frank Marshall & Steven Spielberg
Directed by Steven Spielberg
Allen Daviau, ASC, director of photography

With *Empire of the Sun,* Allen Daviau, ASC, has set a handful of firsts and one third. It is the first production he has been involved with to span three countries and two continents, (four if you count an added sequence shot near Bakersfield), the first to use an entirely British crew, and the first by a major studio in China. The aforementioned third involves Daviau's ongoing collaboration with director Steven Spielberg. *Empire of the Sun* marks their third feature film together. It is, as Daviau said, "a record of sorts."

Based on J.G. Ballard's autobiographical novel, *Empire of the Sun* depicts the life of Jim (played by Christian Bale), a young English boy in Shanghai before and during the World War II Japanese takeover. It is a grim portrait of the horrors of war and the survival of the human spirit. Filming began on March 1st of this year, but preparations were required long before that.

"I'd say the major thing for anybody going to China is: you can bring in what you want, but the wheels have to start turning very early," Allen Daviau said. "The thing of getting people and equipment in and out of China is something that takes months of advance planning. You understood in November (1986) you weren't going to shoot until March, but the decision on what equipment would go to China had to be made right then, because equipment going by sea took over two months' travel to get around the world.

"The Chinese really want to encourage co-production; you can feel it from the first time you talk to them," Daviau added. "I personally talked a lot with a man named Yuan Miaojun at the Shanghai Film Studios Film Co-Production Department. His English was superb and his knowledge and love of film extraordinary. But the Chinese were not used to having things move with the speed that we are. They were not used to changes being made and accommodated. I'd say this is not just China but many other countries. We – the British and Americans – are very impatient people and we wanted to have the option to change things right up to the last minute."

Fortunately for the production designer, Norman Reynolds, there were some portions of Shanghai that required few changes at all to pass for the prewar era. "The major thing that had to be changed was all of the signs," Daviau said. "After the war the characters in Chinese writing were greatly simplified so every sign we photographed needed to be changed back to the more complex characters."

From the beginning it was understood that China would only be used when it was absolutely necessary – scenes of the city and where thousands of Chinese extras were needed. The Sunningdale area in England was substituted for the English settlement in Shanghai, and Spain was chosen for the prison camp outside Shanghai where young Jim is eventually taken. Although economic considerations and the desire to use English actors resulted in a variety of locations, each had to pass for China and intercut together. Obviously one cinematographer was needed throughout and, in order for Daviau to be that cinematographer, special permission had to be obtained.

"When Steven became interested in doing the project, it wasn't known whether I could be involved, because permission would have to be obtained from British immigration for me to be able to work that time in England," Daviau explained. "Kathleen Kennedy and Frank Marshall, our producers, made application to British immigration and to the film producer's association over there for permission for me to come into England for those three weeks that we shot there."

Many on the crew were not strangers to Daviau or Spielberg. Norman Reynolds and special effects supervisor Kit West had both worked on the *Indiana Jones* films. Daviau had met second unit director of photography Jimmy Devis while both were shooting in Mexico city, the former on *The Falcon and the Snowman,* the latter on *Dune.*

"Mike Roberts was the A camera operator," Daviau continued. "His reputation is so solid and his demeanor so cheerful and confident that any cameraman would be very fortunate to have him. The key grip or camera grip as they call

Opposite: ***Jim (Christian Bale) exults in the destruction of the Japanese air base. Spectacular visual effects were accomplished quickly through careful planning.*** **Below:** ***Daviau and crew prepare to use a Hot Head remote camera head and Python arm to follow Jim's search through the barb wire perimeter of the camp.***

Above: ***Basie (John Malkovich) questions Jim in the ship's dingy cabin. The set was constructed at Shanghai Film Studios.*** **Right:** ***Jim dines alone in the deserted mansion. A brute arc projects the shadow pattern of the window mullion through the smoked interior.***

it in England is a guy named Colin Manning and he had worked for Steven and Doug Slocombe on *Indiana Jones and the Temple of Doom*. In fact, Colin was the man who ran the dolly around the stage at Elstree during the mini-car chase sequence. I had visited that set and had been very impressed by Colin and his virtuosity with that dolly.

"When I met Mike I said, 'I want you to pick the B camera operator and focus pullers that you know.' Our B camera operator was Barry Brown who had, I gather, only a few years in features. He delivered magnificently. He handled B camera on the first unit and along with John Muskall and Mike Fitt, joined Jimmy Devis on director Frank Marshall's second unit. That unit produced some of the most compelling images in the film.

"What's so fascinating is that these crews do so much international work," Daviau emphasized. "They've been everywhere, and because so many British pictures are international productions, our key suppliers such as Samuelsons and Lee Lighting are used to sending off equipment around the world. They know all the shipping procedures that have to be done so if you need something in a hurry you get it in a hurry."

The logistics of a production such as *Empire of the Sun* are staggering. Not only were the moves between countries planned to the last detail, but even within locations in England and Spain, men and materials had to be carefully coordinated. "All our production representatives – Chris Kenny, Janet Yang, Paul Tivers, and Ted Morley – had to keep track of so many little details about what we had to have. We had some tricky stuff with equipment leaving and new equipment coming in. In England we were backing out of the country shooting. 'Can the zooms go today? Can the long tele's go tomorrow?' Shipping stuff out was complicated, because you don't want to send it out too soon and then need it, but maybe you know you'll need it day one in Spain...

"Our chief focus puller, Eamonn O'Keefe, was a master of logistics and kept a staggering amount of camera gear ready for use."

In addition to keeping track of equipment going into China, there was the problem of what to do with the film coming out. Daviau had considered early in preproduction whether to use labs in Asia for developing and processing dailies. The reputation of Shaw Brothers in Hong Kong and Far East Labs in Tokyo was excellent. There was just one question mark: communication.

"I talked to others who shot there, and generally the answer was that technically the labs in Asia are wonderful, but with the vagaries of language...you might not be able to communicate the subtleties of certain things and have them come back correctly the first time. It isn't just a matter of translation, but of understanding.

"So we judged airline schedules and figured that it could be done sending everything back to Technicolor London just as efficiently as anywhere else. Every night, if we cut off at a certain point in the afternoon, we could make an evening flight from Shanghai to Hong Kong and get it on the Cathay Pacific flight in Hong Kong which would get the film through to London the next morning. That would put, say Monday's footage in London Tuesday morning and in the bath in London Tuesday night. I would get a report out of London Wednesday morning (London time) which would be for me in Shanghai late Wednesday afternoon."

Unfortunately for Daviau, the ease of shipping film from Shanghai to London could not be reversed. "Upon checking with customs brokers and agents it was determined that it would be asking for a lot of difficulties to try and return dailies to Shanghai so that we could see them," he explained. "So we made the decision that makes every cinematographer shudder, which is to fly it blind – so I would not see any dailies for the three-plus weeks in Shanghai."

For Daviau, this prospect was not comforting considering that the film's largest crowd scenes would be shot in China, many with pyrotechnics and smoke. "Smoke is extremely subjective as to exactly how obscured a scene should be at a given moment. That is why you simply must learn to trust what you see when you're standing by the camera. I don't think Freddie Young saw any dailies out in the desert on *Lawrence of Arabia*. He had his telexes from the lab every day and that's how they did it and we did the same thing. Except I also had the advantage of excellent telephonic communications from Shanghai. With satellites today the quality of the fidelity over a distance from Shanghai to London or Los Angeles was very good and it was virtually direct dial."

The eight hour time difference between Shanghai and London was a convenient one. Evening in Shanghai was morning in London and after each day's filming, Daviau could contact Bob Crowdy at Technicolor for a report on the latest dailies. In addition, he received daily telexes that listed printing lights, reinforcing the judgments he had made during filming. "When you're out there you feel awfully alone if you don't have somebody seeing the film for you," he explained. "Particularly when you have literally 5,000 people show up as extras on the first day.

"The communication would be with Bob Crowdy and with Michael Kahn, our editor," Daviau said. "We would come in at six o'clock at night, I would call Technicolor London and it would be ten in the morning there. Both Steven and I could talk with these people and find out what their thought was. We had Bob for technical evaluation and Michael Kahn

Above: ***Downtown Shanghai is invaded by more than 2000 costumed extras, including Chinese Army troops in World War II Japanese uniforms.*** **Left:** ***Japanese checkpoint halts cars on Shanghai bridge.***

Japanese detention set, built in an abandoned gas works in London, was lighted with 55 blue-gelled "space lights" for top ambience and strong backlight from brute arcs through the windows.

for story judgment and that's the way we shot China."

The overcast skies of Shanghai in March were considered desirable by Daviau. Not only would the dark clouds intercut well with those of England in the spring, but from an artistic standpoint, they conveyed the sense of impending doom that pervaded pre-war Shanghai. "For the look of the film, we wanted to have the lushness of his home and the kind of lifestyle he led, the mass chaos that was Shanghai, and a total feeling of apprehension. We establish that Jim is a very protected, spoiled boy."

This sheltered lifestyle is brought to an abrupt end with the sudden attack by the Japanese. Amid the chaos of the panic stricken city, Jim is separated from his parents and forced to survive on his own. For this sequence, streets and intersections in Shanghai were closed to traffic and filled instead with thousands of Chinese extras.

Like *The Color Purple, Empire of the Sun* was shot in 1:85:1 format with a 1:66:1 hard matte. As with all of Daviau's films, Panavision cameras were used, and *Empire* was one of the first features to utilize the fast, high quality Primo lenses made by the Leitz Company of Canada for Panavision. In addition to a full complement of Primo lenses, two older Ultra Speed lenses, a 24mm and 29mm, were taken. "The 29 is one of my favorite focal lengths and I just couldn't see doing the film without it," Daviau said.

In addition, a handful of zooms were picked up, along with the two Golden PanaFlex cameras, from Samuelson's in London, among them a 25-250 and a 20-100 Cooke. "Neither Steven or I like to zoom. Occasionally in a parallel tracking move we will hide a zoom or sometimes you're sending out a camera to shop for shots in the big spectacle scenes and the rule is that it is used as a variable prime. We don't want to see the zoom on the screen," Daviau said. He added with a grin, "although occasionally we try one of his infamous dolly/zoom combination shots."

One of the more complicated shots in the crowd sequence involved a seemingly impossible view looking stright down into a Shanghai intersection. "Steven had talked about this one very big shot that, while modified, still came out to be a very spectacular view," Daviau explained. "It involved getting a crane on top of an office building in the center of Shanghai at our key intersection to look straight down into the melee when the Japanese troops are marching in."

The task of installing track across an intersection ten stories high was alleviated, however, by the use of a new crane privately built by, a British grip. "Colin (Manning) showed me a brand new setup called a Multicrane," Daviau explained. "When we first approached it, it looked just like a standard camera car with an arm, but this arm would come off the camera car and go onto a standard pipe track dolly. So you could use the arm and the operator and focus puller could ride the crane. You could also put an extension on it and have it go up higher with just the remote control Hot Head. The fact is that you could work it in one scene as a camera car arm and then

A hallucinatory image from Jim's delirious awakening at the detention center.

in the next scene remove it from the chassis of the camera car and go right onto track on the ground.

"It was particularly used with the Hot Head as a remote controlled camera and the most flexible use of this was that the arm itself didn't weigh that much. Colin only took two hours to get the track and the camera crane up to the top of the office building, mount the Hot Head, and put it on so we could do a shot that starts with the camera many feet off the side of the building with the arm projecting out. Of course one of the joys of the Hot Head is that it points absolutely straight down.

"So you are looking down seeing the bottom floors of all four buildings at the corners of the intersection. You're seeing thousands of people running, milling around in the intersection and then as the crane pulls back you're looking down over the backs of the Kuomintang rebels firing down into the crowd. So... where the hell's the camera? Later there is a repeat of that shot and you see that the rebels have been killed and the Japanese soldiers are dragging them away. It's just a phenomenal shot due to the flexibility of that little crane and the Hot Head.

With the Hot Head camera mount, remote controls were used for focusing and – something new to Daviau's technical arsenal – iris control. "The Haden stop changer, which is made in Sweden, is not like any form of f-stop control I have ever used. It allows you to change a stop during a take no matter what lens you're on. The Haden allowed our focus puller, Eamonn (O'Keeffe), to change lenses and give me the stop changer very rapidly. You have a control that lets you change the stop from a distance, compared to putting your hand in and trying to turn the stop ring on the lens and getting in the focus puller's way.

"This lets you look at the f-stops on the lens itself and change them while you're walking along, or if the camera is going to be 'way up in the air and out of sight, they have one of those remote video cameras that is looking at the f-stop ring. You find that this is a tool for massive or for subtle use. It let me do things that not only would have taken a lot of time to light but would not have been as good. Sometimes being able to follow the actors and slowly open the lens as they go to a darker area is far superior to leaving the stop alone and putting light there.

"We did some bleach-ins where the screen would start completely white. We knew we could do this in an optical, but we decided to go for this on the film so that we could see it. So often you say, 'We'll do this as an optical,' and it never gets done because nobody sees it at the time. Besides, by doing it this way we stay first generation and I think one of the goals of every cinematographer is to keep as much of the film first generation as possible so that you don't have the quality change when an optical pops in."

Daviau noted that each camera had video taps, and that Spielberg utilized them even more

Soft late afternoon window light sets the mood for Jim's confused return to the prison camp's family barracks. (Daviau's favorite lighting sequence.)

than on *The Color Purple*. "Steven really got into using video assist basically because we used the Hot Head remote control camera so much that he got used to the monitor being there. When it becomes a useful tool is not so much for playback but while the shot is running as an extension of the viewfinder for communication between the director and camera crew."

Shanghai was also the location of almost the only studio work on the film. The set, a cabin interior inhabited by Basie (the protector/exploiter who takes Jim under his wing), was built in case of foul weather. "We didn't need to use it as an emergency stage," Daviau said, "(but we) shot it in Shanghai because the set was built there. I think we had a total of two and a half days on real motion picture stages in the whole picture. The rest was all location. Basie's ship's cabin was shot at Shanghai Film Studios, also the interior of the hotel room when the war starts was at Elstree, and I think we did a poor man's process shot there of Basie's truck at night. We have some blue screen scenes that were done not on a sound stage, but in a warehouse in Trebujena, Spain that we converted to a stage."

With the three weeks of shooting in China completed, the production moved to the relative familiarity of London. Daviau noted that in accordance with Spielberg's philosophy concerning location moves, there was very little down time. "In the case of China to England I think there was a total interruption of five days. We shot Tuesday, and Wednesday through Sunday was travel and then back to work Monday. And it's not just a matter of money, it's a matter of momentum – all these departments; camera, grip, electric, special effects, everything – in both China and England. We were backing out the door shooting in order to get equipment traveling. That's what we had to do just to move all this equipment and all these people around the world.

"The joy of shooting in England was that I could go to the lab every morning and see my previous day's footage before going out to the location. When we went on to Spain we set up a screening room and Samulesons sent us a wonderful projectionist and two portable projectors. Seeing film on a daily basis allows the cinematographer to apply the subtle touches that give a film its look."

In England, scenes of Jim's pre-war childhood were filmed in Sunningdale, a London suburb. In addition, an abandoned gasworks building (not far from the one Stanley Kubrick demolished for *Full Metal Jacket)* was used for the Japanese detention center, the place where, as Daviau described it, the healthy prisoners are sent on to internment camps and the sick are left to die. It is there that Jim finds his determination to survive.

The gigantic interior space was pre-rigged with speed and flexibility in mind. "What I always like to do," Daviau said, "is to be able to light something for the biggest, widest shot possible and then move right in and shoot closer coverage with a minimum amount of modification and then jump out wide again if we see something else. To make this possible, my gaffer, Peter Bloor and his electrical rigging crew installed the most complex lighting setup of the film."

The entire ceiling was rigged with units called space lights. Each fixture contains six quartz lamps that can be controlled in sets of three. "You can have them on half, or on full," Daviau explained. "The beauty of these things is that you put black skirts of cloth on all of them and, even from an enormous height, they tend to be quite specific in the area to which they give a top ambience. We worked with full blue gel on them. The only tungsten lamps in the detention center interior were the practical fixtures that you see. Otherwise we assumed that all the light coming through would have been window light.

"We had 55 space lights individually controlled. In other words, where they plugged in up top they had a man the whole time, and I could say, 'Give me the row farthest away, and then give us a cluster of four central ones here,' and he could switch them individually. I think we had them all on only for one shot and the rest of the time they were used to accent specific areas.

"Providing back light to the scene were intense beams of 'sunlight' shooting from the building's high window openings down through the smoky interior. For this, a total of eight brutes were mounted on crane platforms and directed through the opposite windows. We used the new Eastman 5297 high speed daylight stock in there and were able to achieve some

very haunting images contrasting the sickly blue daylight with the violent orange of the cooking fires."

On such a complex lighting set up, the differences between working with British crews and American crews became evident. While the process of filmmaking is essentially the same, Daviau was surprised and often pleased with the variations in philosophy. Several differences were in the organization of the crew. "The camera grip and his assistants are members of the camera crew," Daviau explained, "and the grips only attend to, and are only responsible for, the placement and movement of the camera, be it on a dolly, crane, camera car, Titan, up on rostrums or special rigs off sides of buildings. Anything to do with the placement and movement of the camera is the grip's province. Unlike in the U.S., the grips have nothing to do with lighting control.

"All lighting control – things such as silks, scrims, flags – that is all handled through the electrical department of the gaffer and the sparks. For the first week or so I kept turning to Colin and saying, "Well, if we put a 12 by 12..." and he would say, 'Not me, Gov, him.' Once I got used to it, it was a really good arrangement. Colin could concentrate on getting that camera where we wanted it, and on a Spielberg film that is a plenty big enough job."

For Daviau a more subtle difference was found in the accustomed British methods of lighting any given scene. "You may end up with the exact same look," Daviau said, "but how it's done is different in philosophy. The British do not normally use metal diffusion in their lamps – singles and doubles. Of course, American cameramen do. A single reduces half a stop, a double takes a full stop. We do this all the time. Peter Bloor, who has worked with American cameramen as well as British, says the American system is that light control is calibrated – we want things in terms of half a stop, or a full stop. The whole challenge for a British cameraman is to light a scene putting the proper lamp in the proper place achieving the proper spread and intensity and doing as little to it as possible – whereas the American philosophy is to get a big enough lamp up there with enough intensity and then we'll do something with it.

"Peter and I would kid each other about which is the more elegant solution," Daviau grinned. "I had a joke with him: The British cameraman wants the proper lamp in the proper place at the proper intensity. The American cameraman likes the same thing except with a double in it."

This was the first film in which Daviau had the opportunity to utilize three different negative stocks. Most day exteriors and many day interiors were done with Eastman 5247, but some very dark days in Shanghai called for the added speed of the new 5297 daylight balance stock.

"I had tested it in England on a fairly average rainy day and found it to have a finer grain structure than 5294 with the 85 filter," Daviau noted. "I wound up rating it at ASA 160 to achieve the high 30s, low 40s printing lights I want to have with the high speed stocks. When we got to China, most of the overcast days were equivalent to England and 5247 was sufficient. One morning, though, we were shooting the very large movie theater intersection that the family passes through on their way to the masquerade party. The day started dark and got darker. At 11 in the morning with the ball of the meter pointed straight up at the sky, the reading was T/2.5 at ASA 160!"

On several other occasions the new stock was used to get some extra shots after the light was "gone" for the 47. These intercut very well, but Daviau emphasizes that such mixing of stocks inside a scene should be for emergency use only.

The 97 was also used for many day interiors inside the abandoned family home. The 5294 was used for night interiors and for the night exteriors, particularly the large scale night bombing raid and

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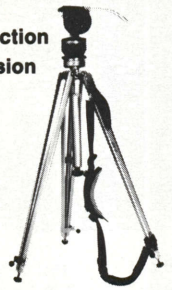

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Daviau in April outside Jim's family home in Sunningdale.

the scenes at the hospital that follow.

"Again, the new high speed stocks continue to give us greater flexibility in dealing with a wide range of situations where, in the past, shooting would have stopped or very elaborate lighting would have been required," Daviau said.

From England, the production shifted to Jerez, in southern Spain. It was here that Norman Reynolds turned what amounted to a gigantic vacant lot into a prison camp in the countryside near Shanghai, complete with a nearby working airfield and hangars. "Norman gave this place a whole history," Daviau explained, "because obviously it wasn't built as a prison camp. He described it as a railroad freight turnaround point where there's a turntable to turn the railway engines around and there was an agent's office and storage areas. This is what it was before the war and the Japanese took it over."

It was here that some of *Empire's* most dynamic scenes were filmed, including an attack on the airfield by American Mustang fighter planes. Young Jim, infatuated with airplanes and flying, is mystified by a Kamikaze ceremony he witnesses on the nearby airfield. After the pilots bid farewell to their comrades, they enter their aircraft and proceed to take off. Shortly after leaving the airstrip, however, one suddenly explodes, marking the beginning of the Mustang attack.

The attack was shot in just three days. Daviau credits the efficiency of the sequence to Spielberg's solid pre-planning, with assistant director David Tomblin, the aerial flight coordinators, and Kit West and his special effects crew. "One of our planes would come through firing out a whole range of machinegun fire, and these explosions are coming from this guy moving the striker down the striker board. He never missed once, never got ahead or behind. As (the pilots) stopped firing the machine guns and lifted up to go over the hangars, they'd drop a plastic bomb. You see the plastic bomb bounce into the door of the hangar and then – baroom – up would go the gasoline charge planted under the hangar. "It's as close as I ever want to come to war."

What Daviau remembers more, however, are the simpler, more dramatic scenes involving Jim's emotional trauma. "The film may not be what people would think of as a traditional spectacle picture," Daviau insisted, "and I think they're going to be thinking of it as that. Not that there aren't scenes of spectacle in it, but you have a definite story of a boy coming of age in incredible circumstances.

"I think my favorite scene in the film is where Jim returns to the European dormitory where he had lived with an English couple, Mr. and Mrs. Victor. He comes in and Mrs. Victor sees him and allows him to come back, gives him back his bed, and unpacks his possessions. He is so overcome by her unexpected tenderness that he breaks down and cries. It's an amazing, very affecting scene and my favorite example of the emotional changes Jim goes through."

Daviau feels that the timing or grading of the final print at the lab is one of the cinematographer's finest creative opportunities, particularly where different film stocks have been used. "Timing gives you the chance to give each scene in the film its appropriate 'character' through manipulation of color and density," Daviau emphasized. "In the case of some of the 5297 footage, our color timer at Technicolor, (Los Angeles,) Bob Raring, was able to remove some of the warmth that seems to be characteristic in the shadow areas of that stock and give those scenes a more sombre quality. At other times, neutral scenes were warmed up and still others matched exactly to the dailies. Sometimes a shot that may have been printed 'incorrectly' in dailies may provide inspiration for the timing of the rest of the scene. I feel that if I am not present for the final timing of a film at the lab I am really missing out on one of the most fulfilling aspects of cinematography."

Perhaps more than any other, Daviau holds a unique perspective on the growth in Steven Spielberg's work. Their relationship spans 20 years, beginning with *Amblin,* the short film which led to Spielberg's first contact with Universal. Two decades, three features, various short films and "odds and ends" later, Daviau sees the collaboration as part of a cinema tradition. "I think this is something that has happened historically throughout film," he said, regarding repeat collaborations between director and cinematographer. "It really helps, because you speak to each other in shorthand. You know what the other is looking for. You have to be careful and not cannibalize your own work, yet there are certain things that a certain kind of shot and a certain kind of light say. They convey what is in the mind of the filmmaker.

"It is very easy for me to know that if Steven wants to look at something in a certain kind of 24mm or 29mm close up, I can sense what the background is going to be and what kind of background action he'll want staged. I will say that in *Empire of the Sun* he said from the beginning that he was not going to shoot as much coverage on this as he would normally, and he did not." △

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Photos by Bruce Talman

Sunset—1920s Movieland Myth

Produced by Tony Adams
Directed by Blake Edwards
Photographed by Tony Richmond, BSC

by Ron Magid

For cinematographer Tony Richmond, shooting Blake Edwards' nostalgic adventure of old Hollywood, *Sunset*, became a celebration of the myths Richmond had grown up with but which he had begun to doubt existed in this cynical age.

Sunset is the story of Western star Tom Mix (Bruce Willis), his technical advisor, Wyatt Earp (James Garner), and their efforts to solve a real-life Hollywood murder. In telling his tale of adventure and intrigue, Edwards had to find a perfect balance between a wide-screen technicolor Western and a *film noir* detective film look – two peculiarly American genres.

"Doing a period Hollywood piece is one of the most exciting things I've done in my career," Richmond beams. "I grew up in the cinemas of England, so to do a movie about Hollywood set in the Hollywood of the twenties is both a challenge and what making movies is all about. This is only my second Hollywood picture, my first was *That's Life!*, which was considered a small movie even though I thought it

had a rather broad canvas. *Sunset* has an even larger canvas, and was more difficult to do because of the period. The strange thing is that recreating Hollywood in the twenties on location in Los Angeles and Hollywood is much harder than recreating London in the twenties or even in the late 1800's. It's much more difficult because there seems to be either very little or nothing left here that is as it was during that period."

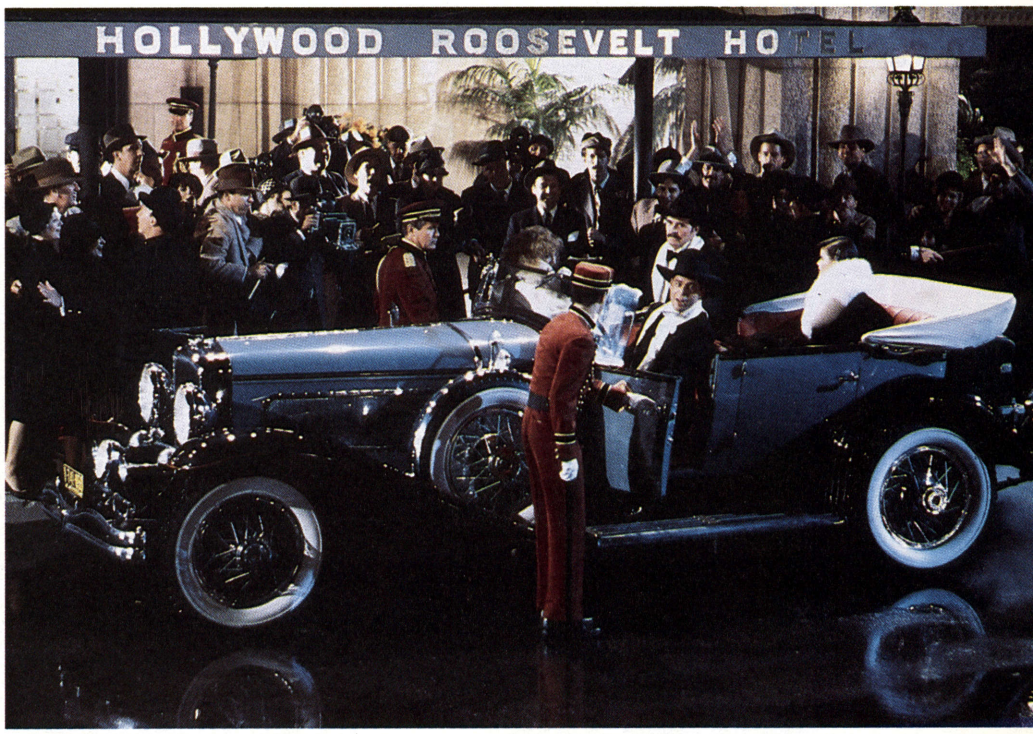
In order to recreate parts of Hollywood, Edwards' crew had to shoot downtown, to recreate parts of Pasadena they had to shoot in Riverside, and to bring the decadent night spots of Culver City to life, they had to shoot in Malibu! "We did the exterior of the Kit Kat Klub brothel at Malibu Lake," Richmond recalls. "We used the Malibu Lake Club up in Malibu Canyon – we dressed the outside with a couple of awnings. Although we were able to shoot the Oscar ceremony at the Hollywood Roosevelt Hotel, where they held the first Academy Awards presentation, we used the back entrance of Bullocks Wilshire because it had a more art deco feel to it. One of the biggest settings we had to recreate was the Pasadena train station, which we shot at an antique railroad museum just outside of Riverside in a place called Perris. Judging from the pictures we had for reference, it looked almost exactly like Pasadena did, and then we added whatever else was in Pasadena in the twenties, which wasn't much!

"A place called Indian Dunes became the western backlot of our fictional Alperen studios. But we weren't always so lucky. We needed to shoot a scene at the portico of the Beverly Hills Hotel, which was impossible to find, and Hollywood Boulevard, night or day, was a problem. We used some miniatures for our long shots, and we went to Introvision, a front screen projection process, for some of our street exteriors involving cars."

Unfortunately, the Introvision process proved to be too restrictive for Edwards and Richmond, so they opted to re-shoot the sequences themselves.

Shooting on streets with automobiles is generally not a stressful thing for most filmmakers, but it was a matter of considerable anxiety for Edwards and Richmond, since the Dusenbergs, Packards and Rolls Royces used in the film were valued at over a million dollars apiece. "We had a lot of car photography to do," Richmond says. "Normally, that's not too difficult, you just put the rigs on the cars and shoot, but we could hardly touch these cars with our hands! We had to have some very elaborate towing mechanisms made, and we couldn't even anti-flare them for highlights. We had to stage a few car crashes up at our Kit Kat Klub location at Malibu Lake – that's a real nightmare, trying to stage near-misses with cars worth that kind of money!"

Delineating and blending two styles as polar opposite as *film noir* and wide screen western



Opposite page: ***Tom Mix (Willis) in full regalia.*** **Top:** ***Back of Bullocks Wilshire stands in as Hollywood Roosevelt when Mix arrives for Academy Awards ceremony. Included in the convertible are Willis, Garner and Hemingway.*** **Left:** ***Making a movie 1920s style within a movie.***

Top: *Willis as Tom Mix.* Center: *The three main characters of* Sunset. Below: *Cinematographer Richmond on set with Willis.*

was one of Richmond's greatest challenges on *Sunset.* "I tried to shoot the exteriors with strong shadows and backlight, in the traditional John Ford Western image, and for interiors I shot closer to the reality of what Hollywood looked like in the twenties. Since the majority of the film takes place on interiors, it was fairly easy to mix these two styles.

"The exteriors are very lush and high-key while the interiors, with the exception of one scene, were all very low key, very moody and very *noir.* A lot of the buildings in those days in this part of the world, regardless of how large they were, tended to have very small windows presumably to keep the sun out since there was no air conditioning. This enabled me to light a lot of our day interiors with strong shards of sunlight streaming in from outside, which was great except for the fact that Wyatt Earp is always dressed in black and Tom Mix is dressed in white a lot of the time, so that caused a bit of fun. That just made it that much more of a challenge, and in the end, we had lots of highlights and a lot of moody shadows, which is a style of photography I adore."

Richmond's hard light style was perfectly suited to both the Western and *film noir* styles of *Sunset,* and was instrumental in recreating the type of glamour photography associated with the early days of Hollywood. "Hard light is certainly, for me, the most attractive light there is for a woman," he says emphatically. "I photographed Mariel Hemingway with a really high hard key straight over the camera so it comes straight in and I got 'The Butterfly', the perfect little nose shadow just above her top lip. That's the classic photography that people remember of that era – all those great black and white shots of Greta Garbo were done in that style, for example.

"To me, the art of lighting is putting the shadows where I want them, not where they fall. There's one lovely shot of James

Garner and Mariel Hemingway in bed that starts off as a wide shot in this little studio bungalow that was rather difficult to rig. I lit it with one 10K, but then I placed about 50 flags around this one light in order to create some shadows and a bit of diffusion. I just prayed that someone didn't kick the light, because we'd have been screwed!"

Richmond's hard light approach did create a few problems when shooting on some of the real interiors Edwards tried to incorporate, as when he used David O. Selznick's actual office on the Culver Studios lot as mogul Alfie Alperen's digs on the fictional Alperen Studios lot. "There's a set that was a nightmare!" Richmond says. "Cracky! That was a terror purely because of the lowness of the ceilings. Those are always the hardest sets to light for style when you're working with directional light. We had to build special rigs for our lights because those ceilings were in the shot the entire time as Malcolm McDowell (Alperen) is walking all around the room."

Complicating things still further for Richmond was the fact that Edwards wanted *Sunset* to be shot in a wide screen anamorphic format. "'Scope is obviously the most difficult format to photograph in," he believes, "because everything is a wide shot. That's why it's so important not to use fast lenses, because even a close-up in 'Scope is a wide shot. If you start using the fast lenses in low light levels, you might as well not have a production designer because you won't see the set. I personally like to see depth, and it's easier now thanks to 5294.

"I used 94 on all the interiors and Eastman 5247 on all the exteriors. Even though I used the fast stock, I used conventional lighting, so although we were shooting in Panavision, I was basically able to shoot the interiors and even our night exteriors between 6.3 and 8, so we have wonderful depth in the movie. It's especially important in a picture

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Top: ***Malcolm McDowell in scene from the film.*** **Below:** ***Drama heightens as three principals discover murdered corpse.***

like this – because we had really grand, opulent sets – that the audience be able to see it all, so rather than shooting with fast stock and fast lenses, I used conventional lenses, and I'm very pleased with how it turned out.

"Blake uses the anamorphic system better than anyone else," Richmond feels. "I don't know why people don't like it – I guess it's coming back more – I suppose it has something to do with movies eventually ending up on television. Although I've never discussed it with him, I'm sure Blake's attitude is that this movie is being shot for the cinema and what happens to it afterwards is beside the point. The great thing about working in this format is that you can do quite a bit more than you can with 1:85. For example, Blake tends to do a number of scenes in one long shot."

While shooting lengthy scenes in one shot often requires a great deal more rehearsal and set-up time, Richmond is quick to point out that the trade-off, in terms of screen time, is generally not that much greater than if the scene required a fair amount of coverage. "Probably the most difficult shot in the film was done on an actual location in Pasadena. Alperen and the bad guy are in the hallway of a huge mansion and we see a large staircase behind them as they move out of picture into the living room. Then we see a woman coming down the stairs. She moves to the living room doorway and listens as we pick up Alperen and the bad guy in the living room, which is all bathed in moonlight. We then pan across the room as Alperen comes out, switching on some incandescent lights, as the woman runs back upstairs. Even though there were a great many light changes and a lot of mood lighting, that shot took us about four and a half hours to rig and we did about six takes, but we got about four minutes of screen time out of it. We lined it up in the morning and that was the only shot we did that day. There was no coverage on it, so it

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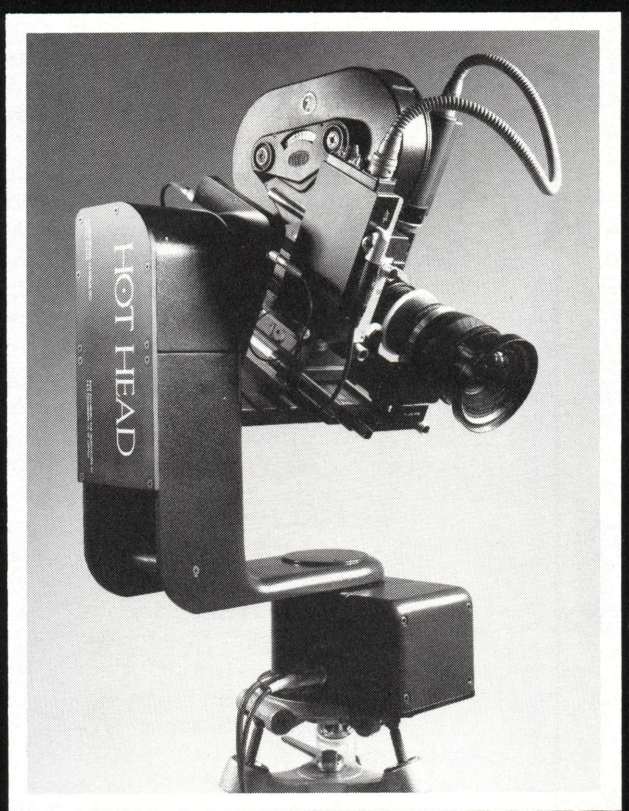

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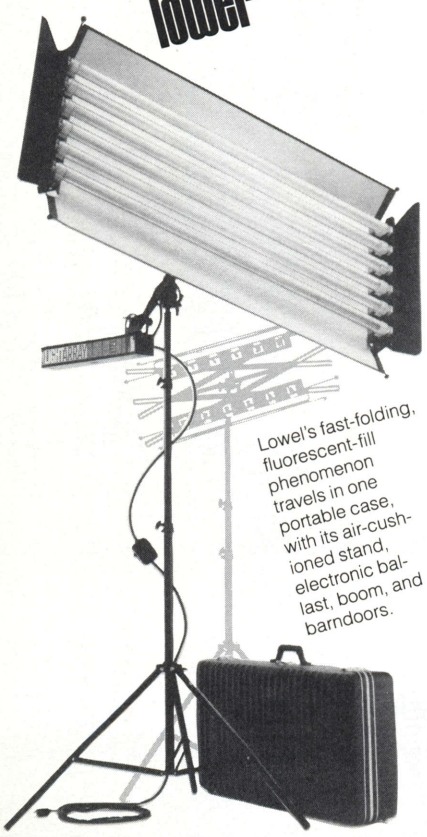

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wasn't like we had to go back the next day and do close-ups.

"That was a real difficult shot because we were working in a real location. If we'd been in a studio, it would've been simple, but because we were in somebody's home, we couldn't rig it to the ceilings. Even if the ceilings hadn't been in the shot, you can't always put light exactly where you want it. It's much harder working in natural locations but it can be very exciting, and that's why we used a combination of sets and real locations. You need a lot of luck, but it's a great challenge.

"Another problem with that particular location was that it was all art deco and very, very white – especially the living room. Since there was a lot of action in there, just keeping the light off the walls was one of the most difficult things I had to worry about. White is probably more difficult to photograph than black, and you have to treat it with great respect. You have to keep the light off it or it'll just pop through and bleed. It was a big location, so we used mostly 10Ks and a few 5Ks, which have such big spreads that knocking them back is difficult. Each shot in that location had to be re-lit individually, so thank God we shot most of our sequences in there in continuity – that was a great help."

Another incredible one-shot sequence follows Tom Mix (Willis) through a stage barroom brawl on a film sound stage, after which he meets Wyatt Earp and the two of them walk through the studio past several other silent films in production and then into Mix's mobile dressing room. "We attempted to do it on a Steadicam," Richmond recalls, "but the Steadicam broke down that day so we did the entire thing on a desert dolly which worked out very well. We began inside the set where we see the fight going on, then we hear the director say 'Cut!' and then we pull back to reveal the camera crew as Mix moves through the saloon taking his false moustache off. We continue gradually pulling back as Mix meets Wyatt Earp and then follow them all the way through one of the big stages at Culver Studios as they walk past four other film sets into Mix's dressing room."

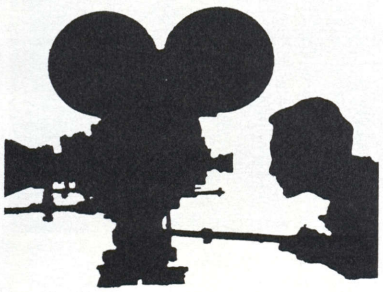
One unusual bit of photography Richmond had to perform on *Sunset* was the recreation of an actual silent Tom Mix film for the opening sequence. "As the film opens," Richmond says, "we're watching a black and white Western. Tom Mix is on a stagecoach and the baddies are chasing him and shooting at him, so he jumps onto the horses, pulls the stagecoach up, saves the girl and then gets shot as suddenly 'The End' appears and we realize we're in a screening room. We shot it at 18 frames per second, and I chose to shoot it in color and print it in black and white so we could put a tinge of brown in it and also in case someone should change their mind."

The final four weeks of shooting were hectic ones for Edwards and Richmond, as they rushed to complete the film before the threatened Director's Guild strike. For lighting a number of large locations as swiftly and artistically as possible, Richmond found the Musco light indispensible. "It's expensive but it's fabulous and very quick to do," he comments. "We shot one night scene on a landing strip we built just outside of Los Angeles – we had a little set built with hangars which I lit with incandescent lights, and then I put the Musco light almost ¾ of a mile away, which gave me a ¾ backlight. We were able to light up the whole of the runway and follow a car as it drives up and crosses the fields with this one light – there's just no other way to do it.

"The night before the strike deadline, we had to basically light up half of San Pedro harbor. I used the Musco light again. It's wonderful and it got me out of trouble a number of times. It was quite a big joke on us they didn't strike, actually, because we

ended up working very long hours to try to beat the deadline. It was a real kick-whatever and scramble for the last four weeks."

Despite the intense challenges Sunset presented Richmond in terms of mixing styles, using the anamorphic format and real locations, he found his director to be sympathetic to the problems he faced. "The film was a wonderful blend and a great challenge," Richmond says, "but Blake is the master of mixing genres. He really made life easy for me, and he's a very interesting director to work for. He'll give me all the time I want – although time is of the essence, he never was on my back. All he asks for is that when I say we're ready, he expects it to be right." △



Things To Come

Westerns may be down but they still live. We have a feature about a new television Movie of the Week, appropriately photographed by a former Texas cowboy, Ken Lamkin, ASC. *Once Upon a Texas Train* includes a gallery of well-known Westerners such as Willie Nelson, Richard Widmark, Jack Elam, Ken Curtis, Stuart Whitman, Chuck Conners, and many more remembered figures from the heydey of the horse opera.The story will be in the February issue.

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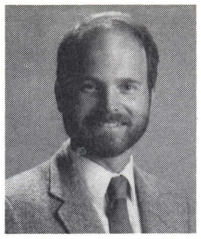
The Electronic Cinemtography section of the February magazine will feature production stories about *Max Headroom* and *Captain Power*, television shows which utilize computer graphics and many electronic innovations to enhance their various charms.



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Lateral Projection for *Little Dorrit*

by Olivier Stockman

Little Dorrit is a film in two parts, each three hours long, adapted for the screen from Charles Dickens' novel. The film has been entirely made at the Sands Films Studios, in Rotherhithe, London. It took nearly two years to prepare, 135 days to shoot and nine months post-production. The cast of 250 actors, includes Derek Jacobi, Alec Guinness, Cyril Cusack, Joan Greenwood, Roshan Seth and many more. Bruno de Keyzer, famous for his work with Bertrand Tavernier, (*A Sunday in the Country*), was the director of photography on this production, which was entirely shot in studio.

For the adaptation of Dickens' novel, the intention of the director, Christine Edzard, was to produce a great sense of reality. Thus, sets and costumes were not designed, but copied to the last detail from original interiors and clothes of the period (the 1840's). Extraordinary care and attention went into this search for the real and the familiar; from the dialogue to the furniture, from the acting to the lighting, everything had to be real. The choice of Bruno de Keyzer as director of photography was obvious in this respect; his masterly understanding of the lighting equipment and his bold intuition render him capable of the most daring effects, which only real life would produce. What is more, de Keyzer achieves this without losing control; the script requirements and the continuity of the light are always met with exactitude.

Opposite page: ***Borough High Street at midday.*** **Left:** ***The approach to the jail, looking north at midday.***

To recreate wide angles of the London streets of 150 years ago was a challenge, requiring the use of some special visual effects. Lateral projection is the process invented to answer the specific requirements of *Little Dorrit.*

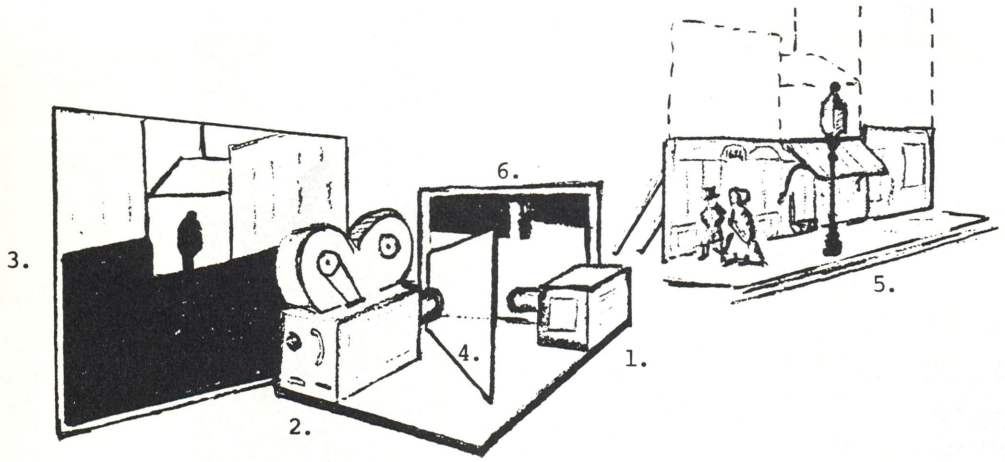
First and foremost scale models of the streets needed were built at Sands Films. One eighth was the scale chosen; ¼ is ideal for interiors, but far too large when a whole street is wanted; 1/12th is more conventional but the smallness is detrimental to the rendition of realistic features. These models were given enormous attention to accurate detailing; each street, each building, each shop was reconstructed from engravings or period photographs. Harley Street, Borough High Street, Covent Garden, Gray's Inn Road, Ludgate Hill and a few other smaller streets were all models of about 50 feet long built on a two-foot rostrum on a stage with a sky backing. These models were then lit accordingly to the script (day, night, rain, sun etc.) and photographed to produce the plates needed. Contrary to the usual practice these plates were shot with a normal 35mm still camera (Nikon) on professional Kodachrome 25 (+84 filter). There were several reasons for this choice:

The high quality of Kodachrome both in grain and in color rendition made it a must for this type of work. However it is not available in any other format. Larger formats introduce the projection problem of the hot spot. No matter how good the condensors are, as long as the plate is larger than the light source, there will be a hot spot. For this reason the old fashioned filament bulbs are better than their modern halogen counterparts. A conventional 35mm stills camera is much easier to handle inside a model, and to position in appropriate scaled down positions.

Wide angle Nikon lenses with f.11 and f.16 settings were used in order to secure deep and even focus. On each model a large number of setups were shot. Each of these camera positions was carefully recorded; camera height to model ground level; camera tilt, camera distance to at least two precise points on the model and camera angle to the model are all vital information. These measurements were taken with surveyor's instruments. A collection of 300 plates was thus created over a period of eight months.

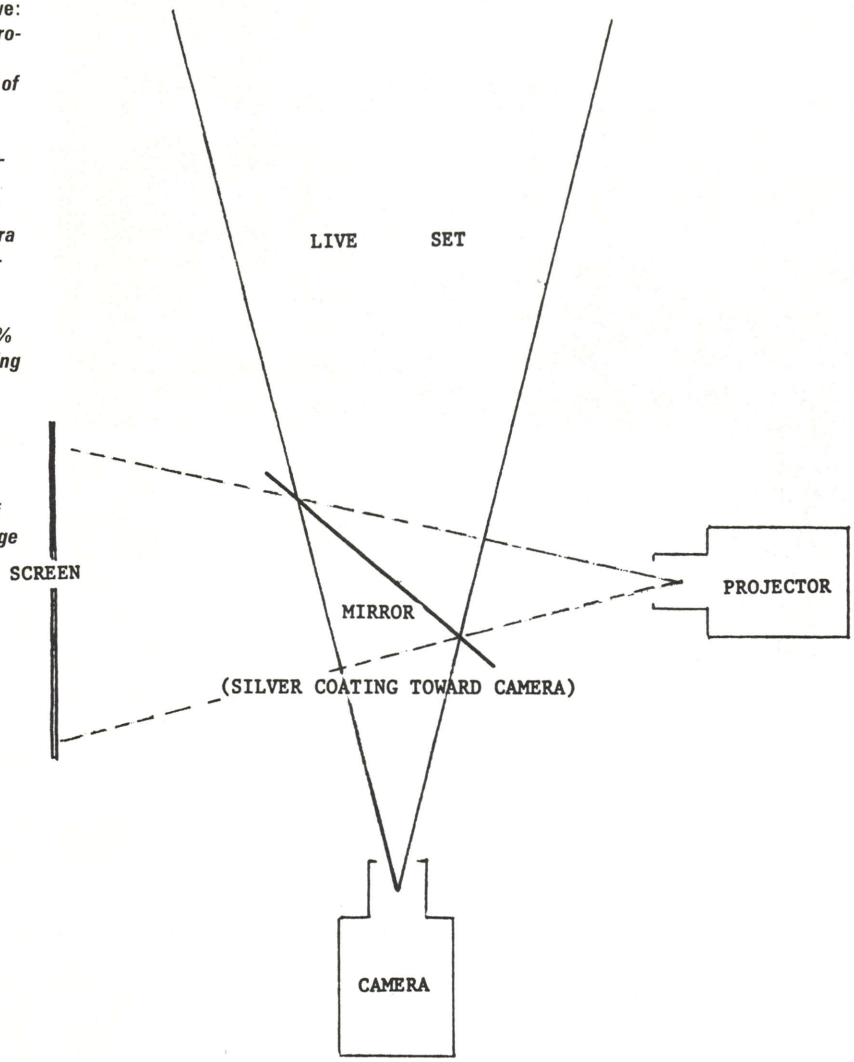
The research material, drawings and plans made from the models were then used for the construction of the live sets. Of course only a fraction of it was built at live size; generally half a dozen buildings per set and only up to the first floor level, but all in the same proportions as the model.

The lateral projection machine itself, (like most front projection systems) is made up of a cine camera secured at right angle to a projector with a silver coated semi-mirror (or beamsplitter) between the two. However, the principle of lateral projection is closer to the old fashioned glass shots in which a live set is combined to a painting by means of a large glass sheet placed in front of the camera. Generally only the lower part of the scenery is



Key to diagram above:
1. Transparency projector, modified to the specifications of lateral projection.
2. Cinecamera.
3. Screen. (The image formed on the screen is inverted because the camera sees it as a reflection in the semi-mirror.)
4. Semi-mirror, 50% translucide, allowing a direct view on the live set. 50% reflection.
5. Live action set.
6. Front matte frame, masking off the part of the stage not built.

Right: ***Lateral projection.***



built, say up to the first floor level. The remainder is painted on the glass and appears to the eye of the camera to be a continuation of the set.

In the case of lateral projection, the live set is built in the same manner, but the painted part of the image is replaced by a transparency. (In the case of *Little Dorrit,* the transparencies were of models, but they could be of existing locations.) The transparency is projected onto a screen placed at right angles to the setup. The function of the semi-mirror is to combine the direct view of the live set to the transparency; by reflecting the image formed on the screen towards the lens. The cameraman, when looking through the finder can see both the live set constructed in front of the camera and the image on the screen, usually about 10 feet on his left. To achieve this, the silver coating of the semimirror has to be turned towards the camera.

The most delicate operation is the lining up of the lateral projection machine to the live set. The height of the camera, its tilt, its distance and its angle to the set have to match the height, tilt, distance and angle of the still camera to the model in order to reproduce the perspective. Lenses, on the other hand, do not affect perspective; but the system is more suited to wide angle lenses since the focus has to be held all the way from the screen (10 feet) and the set (60 or 80 feet). We used 24mm, 28mm and 32mm Hobson Cooke prime lenses for *Little Dorrit*.

To avoid superimposition, the cinematographer and his assistant must determine a matte line; that is the line where the live set joins the transparency. On the screen, the area to be occupied by the live set is blacked out; and in front of the camera, the area to be occupied by the transparency is masked off. The matting out operation is relatively easily done since the screen is only about 10 feet from the setup and the image formed on it is light and not very big. The screen need not be larger than 12 by 8 feet, which is the size framed by an 18mm lens at 10 feet. At such a short distance the projection quality is excellent. Strictly speaking, the screen could be replaced by an enlarged photograph; however there are a few advantages to be gained by using a

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transparency projected on a Scotchlite 3M material, the first advantage being the high illumination level. Besides, I built the projector used on *Little Dorrit* with a few out of the ordinary features, the most important one being that the slide could be moved without altering the accurate line up of the projector to the camera.

On a conventional projector, if you wish to bring the image a little higher, or lower, there is often no alternative than to move the projector itself. However, this is not possible in a system where the nodal points of the projector and camera lenses have to be precisely lined up in order to obtain no distortion, good illumination and even focus. On the *Little Dorrit* lateral projector, the gate was mounted on a microscope stage which enabled the operator to move the plate up and down, left and right and rotate without moving the projector (and without changing the focus).

The projector was also fitted with a 35mm still camera wide angle zoom lens; which again is the only way to modify the size of a projected image without altering the setup. (It is interesting to note that moving the screen would not alter the size of the projected image as seen by the camera. Taking the screen away would enlarge the actual size of the projection on the screen, but it would reduce it in the same proportion because of the increased distance to the camera lens.) The zoom lens turned out to be extraordinarily useful when setting up.

The projector also has a filter compartment to take Kodak color printing and neutral density filters. The color balancing of a plate to the set is one of the most difficult parts of the operation. A number of otherwise excellent effects are spoiled by a mismatch of the colors. Lateral projection does not escape the rule; a lot of the quality of the final result depends on the eye and skill of the lighting cameraman. Bruno de Keyzer had the difficult task of matching the lighting, the degree of illumination and the colors of the plates to the live action sets. In the case of lateral projection there is no going back on it; since the composite image is made in the camera there is no possibility to correct at a later stage.

On the other hand, lateral projection provided de Keyzer with a

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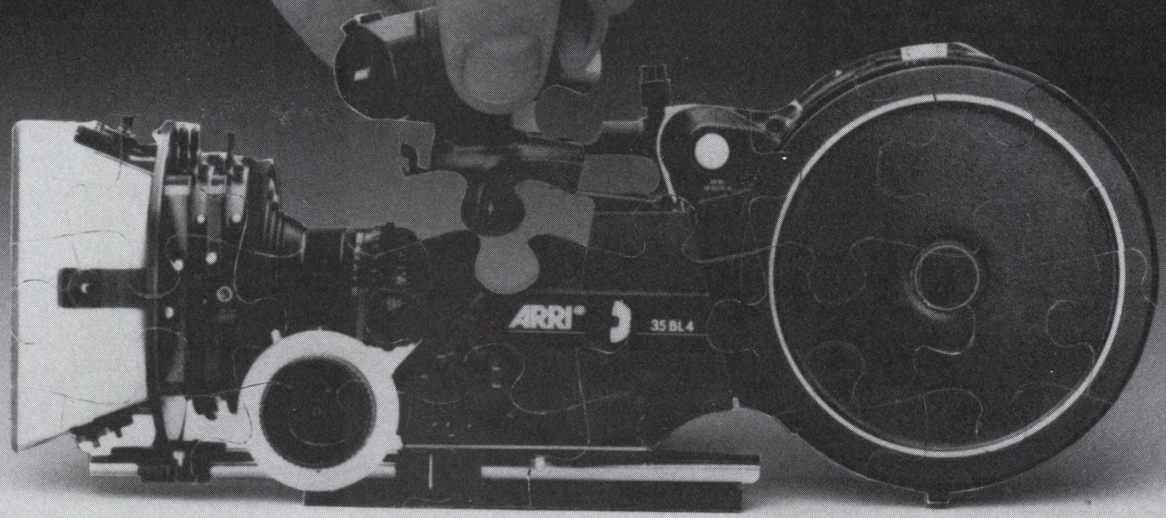

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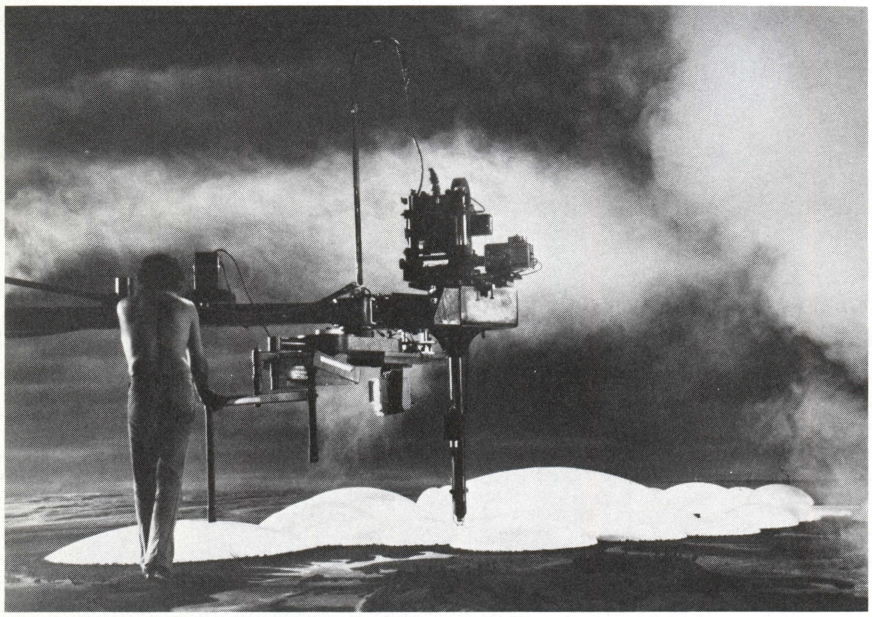

(Photo is of Kenworthy Snorkel Camera in use on "Logan's Run")

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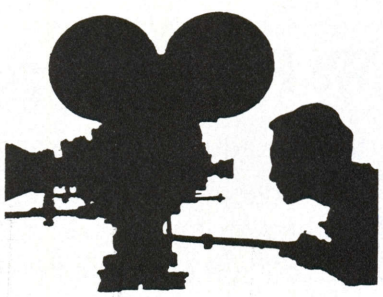
unique opportunity to film special visual effects alongside the rest of the sequence; the system is so light and compact that all the effect shots were done with the first unit during the principal photography schedule. This was a good saving for the production but also ensured a continuity of style. The special effects shots became a sort of routine, just like a complicated shot within a sequence. We filmed one lateral projection shot a day for four weeks. Each day a different set up and each day completing the rest of the schedule. Further shots were scattered in the schedule between November 1985 and July 1986.

The lateral projection system worked well for *Little Dorrit.* It gave excellent results, it was fast, simple to operate and it cost a fraction of what similar effects would cost with other systems. However, it is not a magic new toy to solve all problems; it is simply a good idea, and it has to be seen, like all good ideas, as a specific answer to a specific purpose. △

The author worked on the special effects for Little Dorrit *and is the inventor of the lateral projection system.*



Things To Come

In our February issue we revisit *White Zombie,* a 1932 picture which was lambasted by the critics and has now become a cult favorite. Magnificently photographed by Arthur Martinelli, ASC, the film — for better or worse — introduced the zombie to the movies. Enzo Martinelli, ASC, who assisted his uncle on the production, shares his memories.

Black & White for *The Contortionist*

by Liz Leshin

Think of movies made in New York City or by New York filmmakers and the first thing that's sure to spring to mind are rich, clear images in black and white. Name a few names: Gordon Willis, ASC – *Manhattan,* and more recently Jim Jarmusch – *Down by Law,* and Spike Lee – *She's Gotta Have It.*

Yet when Juan Campanella, a graduate student at New York University's film school, chose to shoot his thesis film in black and white 16mm negative film, he could barely find raw stock. Locating good, rapid processing was another headache.

The director, a native of Argentina, along with cinematographer Daniel Shulman, conceived of the project "definitely in black and white." A futuristic story set in 2049, *The Contortionist* is based on a short comic strip by Carlos Trillo. As in the movies *1984* and *Brazil,* the future is shown as a regression to the past, with individuals struggling for identity in an oppressive society. Protagonist-contortionist Bruce Bailey (played by New York actor Ken Eaton) has lost his ability to perform. Through a series of nightmarish adventures, he seeks to regain the only thing that renders him of value in his world, yet simultaneously enslaves him.

Influenced by sources as diverse as 1940's *film noir* and episodes of "The Twilight Zone," Campanella and Shulman felt black and white was the only viable format for portraying this stark "future-past." "My artistic preference for this project to be shot in black and white overlapped with the practical problem of portraying the future," Campanella explained. "Using black and white is a shortcut to fantasyland, a signal to viewers that this is not reality," he continued.

Choosing to shoot in black and white sounds like a simple creative decision, but the film students had to go through a series of contortions themselves merely to purchase stock, twenty

Top: ***Actor Ken Eaton faces a futuristic nightmare in black and white.*** **Below:** ***Gaffers at work a floor above the set in an abandoned Brooklyn building.***

Photos by Maria Leal

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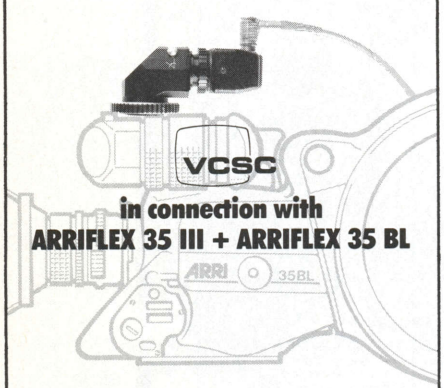

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400-foot rolls of Eastman Kodak 16mm 7222 black and white negative film. Kodak only manufactures the stock to meet perceived consumer demand so buyers are out of luck if Kodak has little or no stock when they need it. During *The Contortionist's* preproduction period, Kodak was running very low so would ony sell five rolls of the stock per person. Production Manager Alison Goldwyn kept calling Kodak and telling them she was someone else. Half the necessary raw stock, ten rolls, was purchased in New York City. The May, 1987 production began while Goldwyn feverishly tried to track down the ten rolls needed to complete shooting. The whole crew cheered when, between takes, she came on the set and announced more film had been located in Colorado and was on its way to New York by express mail.

Finding raw stock was only the beginning of the student production's tribulations. Traditionally, an advantage of shooting in New York, both for students and professionals, is access to processing labs that will provide dailies. However, throw 16mm black and white into the formula, and with the few labs that process black and white at all, dailies become "monthlies" or worse. "We did some lab tests before we began production," cinematographer Shulman explained. "We found only two reliable labs in New York that promised to deliver black and white dailies, so we submitted test rolls to each. It turned out that one was sending its film to the other. In reality, there was only one lab in town offering acceptable-looking black and white 16mm dailies." They provided Shulman with "deceptively good tests" but when it came to processing actual dailies, "they turned our beautiful, contrasty shots into mud," he complained.

Campanella was planning to go home to Argentina to edit *The Contortionist* and was unwilling to wait for DuArt to process the film. "I've used DuArt before and it's a good lab, but it only processes black and white film when it collects enough to make a profitable run. The people at DuArt would only guarantee a five week turnaround time," Campanella noted.

In effect, as far as processing black and white film is concerned, it's easier to get dailies when shooting a feature in New York. "With a feature film like *Down by Law,* DuArt will open a run with real dailies. It is profitable for the lab both in terms of financial gain and prestige. They know the film will be distributed and make money. But processing our whole batch of film only cost about $1,000, which doesn't give us enough clout for a lab to open up a run," Shulman said.

The intrepid students began lab shopping in other cities and finally found Filmtech in Boston, which makes weekly pick-ups and deliveries in New York. Results proved acceptable.

"Two years ago there were good black and white labs in New York but labs don't want to process black and white negative because there isn't the demand for it," said Campanella. Speculating on reasons for the demise of black and white, Shulman said "It's no longer cheaper than color, but it's still thought of as cheaper. Plus, new color stocks have gotten so fast and fine-grained that you can shoot with them in low light in a way you only could with black and white before." In addition, a low budget color look: mixing various color temperatures and a more casual *cinema verité* style have been made acceptable to a mass audience through rock videos and movies such as the French *Diva.* "Black and white has suffered all that," Shulman observed.

Campanella worked closely with art director Rosemary Ricchio to create a look that would convey timelessness. Ricchio chose to go with a variation of the 1940's look. "There's something about that era I like. The objects have a clumsiness coupled with the promise of modernity. Since *The Contortionist* is a post-apocalyptic story, I wanted to use objects that look like they could survive an apocalypse. I don't know if items from 1987 will last until 2049, but I'll bet objects from the 1940's will," Ricchio commented. She had directed a 1940's-style musical earlier in the year and collected a lot of period props at that time. She scrounged local flea markets for additional props. In total, about $1,200 was spent on art direction for the 20 minute film.

Following through with the '40's motif, Campanella tried to find a

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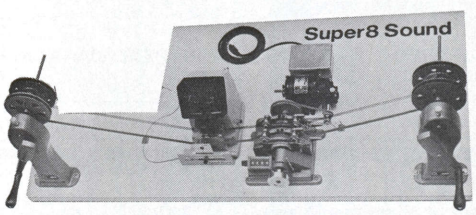

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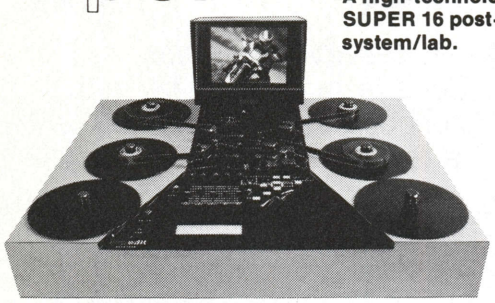

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period subway car for one of the scenes. He discovered the New York Transit Exhibition in Brooklyn: a museum in a former functioning subway station with one car of every subway ever used in New York City.

Ricchio went for the car with the "New Society" design. "This was the first subway car to use stainless steel instead of wicker. It has a lot of space between the seats, which gives it the austere feel I wanted, plus it has wonderful round windows," she elaborated.

Because the car was stationary, Shulman was faced with the challenge of making the train look like it was really moving on a track. He constructed spinning drums with lights inside. Intermittent slits in the drums, along with the spinning motion, created the effect of trains passing alongside the car. Shulman mounted the camera, an Arriflex SR, on a fluid head and mounted that on top of a gear head turned sideways. The gear head permitted Shulman to rock the camera while shooting, simulating actual subway motion. Two all-night shoots provided other challenges for the students. Gaffers lit an entire alley by tying into a local abused-women's shelter. A police officer assigned to supervise filming warned crew members to beware of rats.

The second all-nighter was shot in an apartment building being torn down for renovation. Beams connected floors to ceilings, but there were no interior walls or windows. Heaps of rubble were piled everywhere. Crew and cast literally had to watch their steps or they'd go through the floor. Withoutwindows, sound recordist Melanie Johnson had a tough time getting acceptable sound levels over the blaring music of the Brooklyn neighborhood.

The Contortionist squeezed its way into the can for about $11,000. Despite the difficulties of this production, Campanella remains enthusiastic about black and white. "If a script calls for it, I will gladly shoot in black and white again. I love the effect," he said emphatically. △

Liz Leshin, a New York University graduate film student, was camera assistant on "The Contortionist."

Stereoscopic Video Under the Sea

by Lenny Lipton

As I sat in the 6-foot, hollow, steel ball that is the cabin of the submarine *Pisces VI* with National Geographic photographer Emory Kristof, I wondered out loud, "Why the hell do you do it?"

"It's safe enough," Kristof said. "I'd send my grandmother down in it."

By "down in it," he means down to 6,000 feet below the surface of the Atlantic, some eight miles off the coast of Bermuda. "It's the last frontier for animal exploration. We're discovering new species down there. We're discovering animals nobody knew existed. It's a photographic expedition. We're not shooting anything; we're only shooting with film and video tape," said Kristof, an ebullient man who's liable to do pirate imitations to make his point while explaining the purpose of the Beebe Project.

The project is named after William Beebe who pioneered manned deep sea exploration in this location 50 years ago. Kristof conceived the project some five years ago and succeeded in obtaining backing from the U.S. National Oceanographic and Atmospheric Administration and the National Geographic Society. The project is funded at more than half a million dollars and has brought together a number of the top scientists in the fields of oceanography and ichthyology.

I had come to Bermuda at Kristof's invitation to observe in action the first of the new generation of our *3Vision®* stereoscopic camera system. My company, StereoGraphics Corporation, had delivered the first hand-wired prototype of our Universal Camera Controller (UCC) to the Geographic offices in Washington only two weeks before, at the end of September, 1987. Now I was looking at the device, the first time I'd ever seen it in operation in the field, inside the Pisces. The UCC looked completely at home, rack-mounted along with one of our 13-inch monitors and our playback controller. Two excited men, Kristof and I donned visors and looked at video tapes that had been made an hour or so before, at a depth of about 2,500 feet.

StereoGraphics Corporation manufactures a field-sequential stereoscopic video system that any number of people can look at. By wearing special glasses, viewers can observe a true three-dimensional image from any part of the room, at any angle from the video screen, with freedom of head movement.

Top: ***Inflatable Zodiac craft escorts the Pisces to dive location.*** **Left:** ***Lipton with stereoscopic camera.***

Six years ago, I had the idea for the UCC, and it gave me a great feeling of accomplishment to see the concept go from an idea to a product, and a product in use on a most advanced deep sea expedition. It was worth waiting six years!

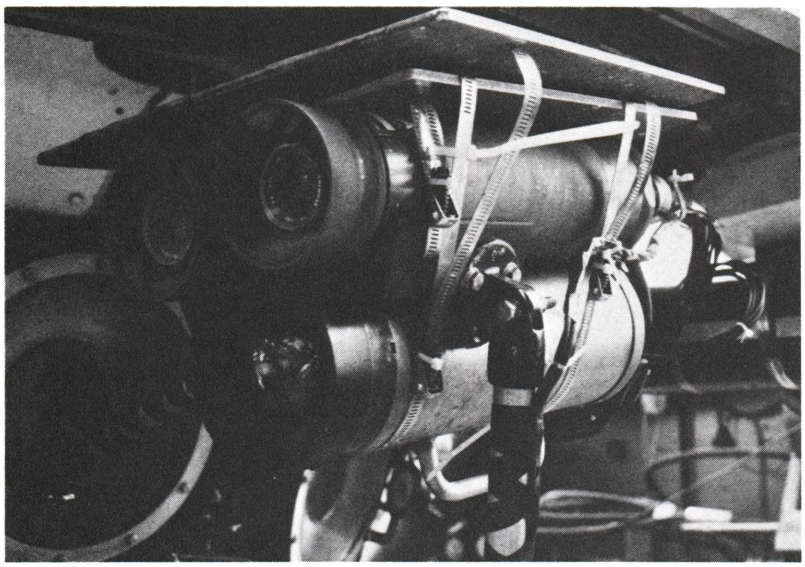
It had taken about an hour and a half to sail from the dock near the Maritime Museum at the west end of the Bermuda Islands, traveling in a converted shrimper, *The Wendy,* to the *Twin Drill.* The *Twin Drill* is a 157-foot vessel, built about 20 years ago, and now owned and operated by International Underwater Contractors. The vessel, which has a twin hull and looks like an enormous catamaran, is an extremely stable platform, even in hurricane force winds, and serves as a launching vessel for the *Pisces VI.*

Those of us who were aboard *The Wendy* were lifted to the deck of the *Twin Drill* by a crane, an experience that I thought was hair-raising and not to be repeated. (However, when we returned to the *Wendy* on the following day, it was by Zodiac, in fairly choppy waters. I prefer the crane.) Once on the deck of the *Twin Drill,* my immediate impression was one of the absolute, total dedication of the crew.

The submarine *Pisces VI* is a steel ball onto which are fitted thrusters, batteries, and hydraulics, all covered by a white shroud. Mounted on the front by the small ports, were two Pulnix TMC-54/56 color solid-state cameras, in underwater housings, functioning together as a stereo camera. The cameras were mounted about six inches apart, using 8mm focal length lenses, which have an approximately 55° horizontal angle of view in the air. When they're used under water, the angle of view is somewhat less.

The Pulnix cameras are based on Sony single chip CCD cameras. They have not been converted to run as stereoscopic

Top: ***Kristof using 3Vision system in the submarine.***
Below: ***Camera mounted on pan-and-tilt head of the submarine.***



cameras, because our new Universal Camera Controller is plug-compatible with any two standard unmodified gen-lockable video cameras. The UCC outputs a standard NTSC video signal, with the left and right images multiplexed within the existing bandwidth, so they can be recorded, or, if preferable, viewed real time. In this case, Kristof was using a Sony Betacam recorder.

The Universal Camera Controller can remotely converge the cameras electronically from inside the submarine, which Kristof thinks is a significant feature, and the UCC is also capable of producing good quality freeze frames. The remote convergence feature allows the photographer to set the location of objects with respect to the plane of the video screen. By sliding a switch, objects can be brought forward, or made to recede.

A few hours after I was on board, I watched the Pisces in its descent. It was launched by being lifted off the moveable steel deck, by means of a crane which was constructed only days before for that purpose. The deck, which at one time must have been a bright orange, was now covered with grease. It was pulled out of the way by a motor-driven winch, revealing an enormous moon pool, some 20 feet or more in diameter. The submarine was then lowered carefully into the Atlantic, to make its way between the twin hulls, after which, with the help of a Zodiac or two, it found the spot where it made its dive.

The *Pisces* sank beneath the surface of the water, which is the same deep blue they paint U.S. mail boxes. Under just a few feet of water, it glowed turquoise briefly, and then disappeared. With melancholy, I watched the craft depart, knowing that there were three men inside. I didn't envy them, but the men who do this job don't think of themselves as heroes. In fact, they have to think that it's routine. The *Pisces* is a completely independent submarine, not tethered to the *Twin Drill.* Its only communication with us was via hydrophone, which I listened to as I stood on the bridge of the *Twin Drill.* There could be no help from the surface.

When the *Pisces* returned, five hours later, we all breathed a sigh of relief. An hour later, Kristof and I climbed into the tiny, steel ball of a cabin, and he showed me the video tapes. Kristof delightedly pointed

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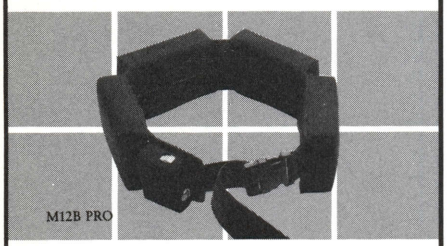

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out features of the ocean floor that couldn't possibly be seen if they weren't viewed stereoscopically. We also saw little fish swimming by.

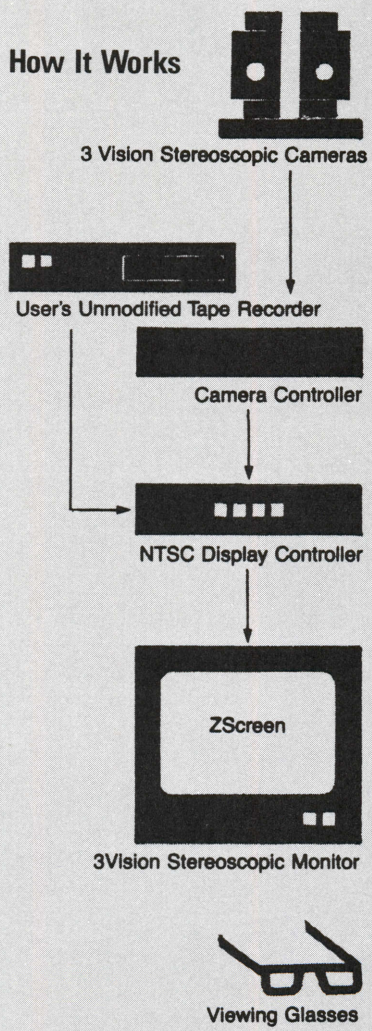
"You couldn't tell a ridge from a bump without stereo video," said Kristof. "This is becoming our most important way of seeing. Planar video wasn't adequate, and the view ports are tiny." He pointed to the view ports which are five inches in diameter.

The tape we looked at is one of the first tapes that had been made on this trip, because the submarine was just beginning to be used on a routine daily basis. Kristof said that he hoped to bring back pictures of sharks and, also of the giant squid, at one time thought to be a mythical creature. Kristof is using a chumming technique which he originated. Bait (in this case, tuna) is lowered by cable to the required depth. After the fish have begun feeding, the *Pisces* turns its lights on, and the photography begins. The fish are so involved in eating, they continue despite the light.

Kristof says he'll videograph enough good footage to present stereoscopic video images to the public in Geographic Hall, in Washington, D.C., starting in February of 1988. At that time, everybody will be able to appreciate the wonders of the deep. In fact, they'll be able to see as well as the men who were there in the flesh.

A week or so later, after my return to California, Kristof sent me a video tape of 16 foot white sharks attacking the robot manipulator arms at a depth of about 2,500 feet. The stereoscopic tape also showed a giant eel and another shark eating a luckless crab. Towards the end of August, 1987, the dives progressed to 5,500 feet and more good stereoscopic videography of creatures of the deep was achieved. △

How It Works



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The signal from the recorder or the camera controller travels to the NTSC display controller and from there to a monitor which runs at 120 fields per second. (The usual video monitor operates at 60 fields per second.) The camera controller powers electro-optics, either in the form of a *ZScreen*® large liquid crystal cell, which allows for passive sunglass type spectacles, or the controller can power active liquid crystal visors. The result is a bright, sharp, flickerless stereoscopic image, which can be viewed by a number of people, and can also be projected on a large screen, using StereoGraphics Corporation's video projector.

Prize-Winning Video Demands 'True Grit'

by Merry Elkins

It was a dream come true. A kiss from Madonna on MTV, a check for $25,000, write-ups in national newspapers, an appearance on "Good Morning America."

"It felt like we'd won the lottery," said Clifford Guest, who with Angel Gracia, won Madonna's "Make My Video" contest on MTV last year for their video rendition of her song "True Blue."

Guest and Gracia could be contemporary heroes of a Horatio Alger novel. Before the contest, the two young Florida filmmakers were working on student and low budget films. They had won awards in school, including a Student Oscar for Gracia, but out in the real world of filmmaking, they were having a tough go at it. Guest, also a musician, served as a recording engineer for local studios.

But when Gracia saw the MTV ad for the contest and phoned Guest, the course of these men's lives changed.

They had little money and even less time. With just ten days to conceive the script, do pre-production, shoot, edit, and mail their entry to New York, Guest and Gracia pooled their savings, and set themselves into high gear.

Gracia picked up a cassette of "True Blue" and listened to it during the 40-minute drive from his Key Biscayne house to Guest's Lauderhill residence. During the drive, he imagined the song set to a contemporary "Miami Vice" theme, shot in color with nighttime exteriors. But when Guest heard it, he envisioned a different era.

After listening to the lyrics, Guest thought "True Blue" had a '50s groove to it. Both men saw it as a romance about first love, and agreed that it should be done in black and white. Their only concern at the time, was locating clothing and cars from the era. With the clock ticking away, and less than $1000 to spend, the two men had to find a quick solution.

Florida International University supplied costumes. The grandmother of lead actor Bill Fitzgibbon had a vintage '56 Thun-

Gracia, Guest (on Steadicam), Lara Radford, and Gary Roberts on set with Tim Scott.

Top: ***Guest and Gracia using Steadicam and dolly on set for True Blue.*** **Below:** ***The two entrepreneurs working with Sony tape machines.***

derbird on hand. Fitzgibbon gave everyone a good laugh because he'd never driven the car, or had experience driving a stick shift. During some of the driving sequences, the car had to be pushed.

Fitzgibbon's leading lady turned out to be Annabelle Gracia, Angel Gracia's sister. Other actors in the video were students from Marshall Cohen's drama class at Coral Gables High School.

Using a Sony CCD color video camera, a Sony 4800 3/4" portable video deck, and a camera control unit to alter contrast, Guest and Gracia went out on location for four days. They shot on the grounds of Coral Gables High School, in the cafeteria, and in the classroom. They taped exteriors in a park and by a river, and interiors at a local soda shop and inside homes. No location permits were required of the team, and the homes that appeared in the video belonged to friends and to Fitzgibbon's grandmother.

Although Guest believes there is a professor at the University of Miami who cites "True Blue" as an example to his Super-8 class, Guest wants to go on record that "True Blue" was shot on video tape. "We wanted to shoot on film, but we didn't have the money or the time to look at dailies," said Guest. "But we did follow a film philosophy, and we went out of our way to make sure the videos looked like film. We made sure we didn't keep the signal clean. Anytime we could, we added grain. This made it look more like old film," added Guest.

"The more demand you put on the video electronics, the more pronounced the grain," continued Gracia. Both men are tight-lipped about the process they used to put the final touches on the tape to make it look like film, but Guest and Gracia have given it a name. "We call the device a 'gagger,' because it 'gags' out the tape and makes it look like film," maintained Guest.

"As far as we knew, there was no way to take the color out using the camera. But we got hold of an old 3/4" deck from Florida International University, and with that, we were able to take it from color to black and white. When you lose generations on tape, it usually makes the image look bad. But taking out the color was essential for the '50's look. It also took off the hard edges and made it look very pretty," said Guest. While taking the color out, they transferred from 3/4" to 3/4", and then bumped it up to one inch to edit and add effects.

Fog filters and contrast filters also helped to take off the hard edges, diffuse the image, and make "True Blue" look more like film. Guest and Gracia used natural light whenever they could.

"Many videos are lit safely; but we don't mind shadows, or if part of a scene is dark. We don't mind backlight. A four-to-one ratio of backlight is not uncommon to us," contended Guest. "Video people don't often do that, because video is most often used in news gathering and in soap operas. We wanted to stay away from that kind of look," added Gracia.

When necessary, the team augmented the available light with a 2K Fresnel, a 2K soft light, a 1K Fresnel, a few open faces, three spotlights, and 6-light. They

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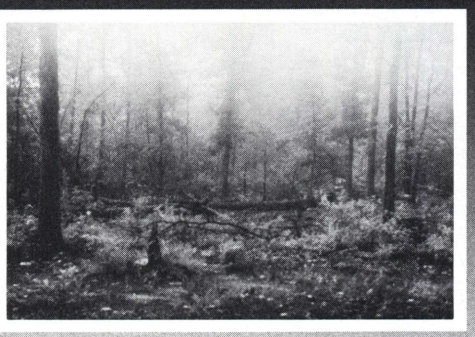

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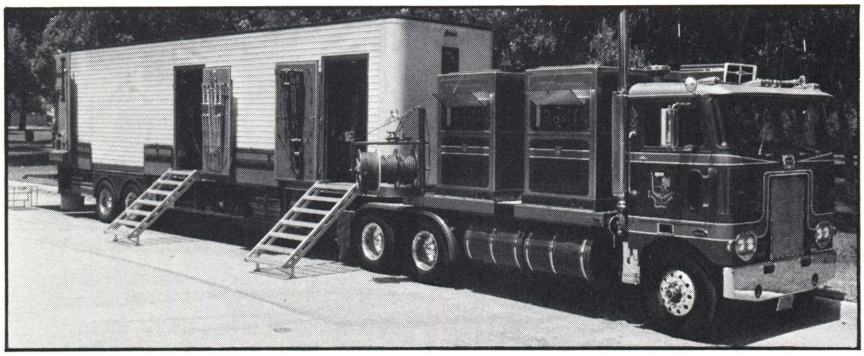

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used the 6-light during the dance sequence. "We blasted that through the window. We used filters and smoke to diffuse the images. We used a 2K softlight and a 2K Fresnel heavily diffused with spun glass to fill," said Gracia.

Using the effects of frame storage for effect and to pace the scene at the river where the girl playfully tries to push the boy into the water, Guest and Gracia were able to add more depth to the video. "We shot the scene without knowing what we were going to do in the editing. That's where we took it from the romanticism of the '50s to modern times. We used an Abacus for frame storage, and we edited offline on a pair of Sony 5800 series decks, we edited online with old one-inch Ampex machines," continued Guest.

They shot a high ratio – 200 minutes for three – but transferred just 100 minutes. "The actors and actresses were all amateur and had to be directed constantly for their performance," said Guest. "It was real tough to edit because we had to wade through so much footage until we found the performance by the actor or actress that best suited the story," added Gracia.

The camera remained locked throughout the entire video, with the exception of one scene: the dance sequence at the prom. Guest did a low-angled shot using a Steadicam, following the dancers as they did the Stroll. "Camera moves have to be integrated into the telling of the story. Otherwise, we won't make them," declared Guest. "We followed the dancers because we wanted the audience to know what it felt like to be dancing with the kids. We also moved the camera on a shot where the couple walked underneath a bridge, and one where they walked through a rose bed. But these scenes didn't fit the pacing of the song, so they didn't make the final version," continued Guest.

Although none of the dolly shots were included in the video, Guest and Gracia employed a homemade dolly constructed from plywood and using Ultralight wheels. Guest, a former Ultralight instructor, remembered that Ultralight wheels would sometimes bend on hard landings, and had to be discarded. "We took the tire and inner tube off the rims, and rolled them on PVC pipe, which we put together with spaces in between like dolly track. The dolly rides on the bead of the wheel, and it's unbelievably smooth," added Guest.

"True Blue" was a collaboration in the true sense of the word for Guest and

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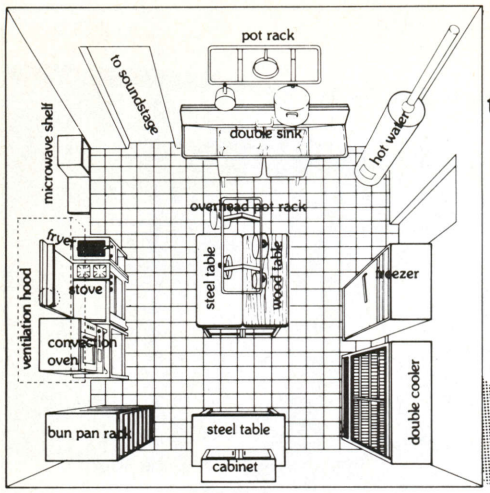

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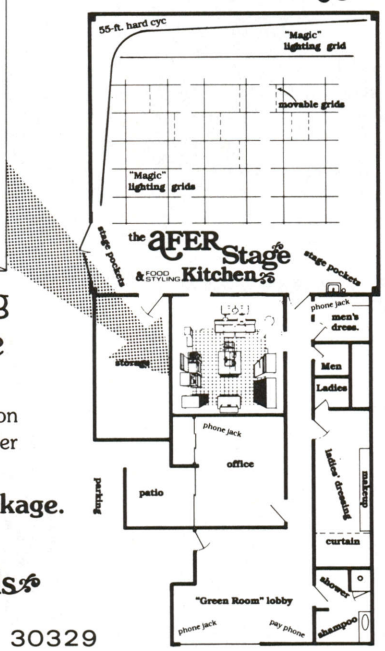

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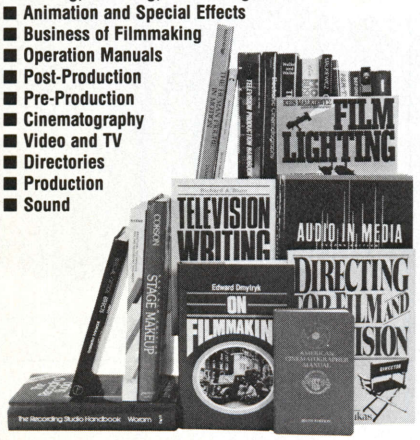

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Gracia. They shared responsibilities equally as co-writers, co-producers, co-directors, co-cinematographers, and co-editors. According to Guest, they see the same types of shots, lighting, and pacing. "I think it is a nice blend of ideas that makes the team work so well," said Guest. "We are going to continue to work together because we both feel that we can share ideas effectively," added Gracia.

The lack of time and money combined with a diet of Chicken McNuggets were the major issues of discontent in addition to the normal production problems. But in the long run, the two men knew it would be worth it.

And it was. But Murphy's Law was in effect to create the last glitch in this Horatio Alger story.

The day MTV chose as its deadline was a holiday. Guest's and Gracia's tape arrived at the station that day, was refused, and sent back to Florida. They contracted Mary Taten and Peter Danielson, who were responsible for the contest. They told Guest and Gracia they would accept the tape if the men could prove it arrived on time. They mailed it again. Again, it was refused. They decided to hand-deliver it, and flew to New York.

Over 1000 videos were submitted for the contest. Ten were chosen as finalists by a panel of 30 to compete in the national phone-in contest to be held on MTV. The station showed one video per hour throughout the day for previewing. Later that night, they showed all the videos back to back, assigned each a number, and opened phone lines for voting. Voting lasted an hour. People called in from everywhere.

Guest's and Gracia's version of "True Blue" won hands down with 23,000 votes, with only 500 votes coming from their friends and relatives.

"Ours was the only black and white video. I think that was a plus for us. Also, it did not rely on special effects. Rather it was the warmth of the story that made it play and feel right. I think that's why people could relate to it," maintained Guest. "Madonna liked ours a lot, and told us she wouldn't have known what to do if ours hadn't won."

"The audience really chose the winner," added Carol Robinson, who was part of the team that chose the ten finalists. "It was in the audience's hands. We got a lot of requests to show the video after the contest. That's a good indication that a clip is doing well."

Guest's and Gracia's "True Blue" reached number four in the country, and became one of the top ten most requested videos on MTV for the next four months. At one time, it hit number two.

But that isn't the end of the story.

Mike Rosenblatt, A&R executive at Geffen Records was home watching the contest. "The quality and feel of their video was great. The camera angles and shots were unusual. They cut from a guy thinking to a high school dance, and it really worked," said Rosenblatt. "I liked the texture of it. Then I saw them later with Madonna awarding them a check. She told them, 'you guys did that for $1000? I should have you make my next video.' And I thought, yeah. Why not have them make my videos?

"I sent them the Tim Scott cassette, and they liked the tracks. I spoke to Tim about concepts, and we went to Fort Lauderdale and made two videos from the album 'The High Lonesome Sound.' The two songs were 'The Sound of Thunder' and 'I Could Be Anything.' They came out incredibly well. I figured if these guys could pull these videos off, I'd hire them," continued Rosenblatt.

Guest and Gracia, with help from associate producer Lara Radford and production designer Gary Roberts, finished each video for far less than the cost of an average clip. Rosenblatt offered them the job. Geffen may be the first major record company to create positions as in-house video producers. Guest and Gracia were offered a one-year contract, with a one-year option, for what the two men refer to as "great money."

Since taking the job with Geffen, Guest and Gracia have done videos for Scott and for the band "Esquire," whose lead singer Nikki Squire is the wife of "Yes" bassist Chris Squire. They have formed a corporation, and have taken on more employees, all of whom are friends.

Rosenblatt may be grooming the team for more. Guest and Gracia wrote a script for a movie Geffen is looking at. "They're in on the ground floor," continued Rosenblatt. "Geffen is a full-service entertainment company. We do movies and theater as well. You never know where this is going to go." △

Merry Elkins is a free-lance Los Angeles author.

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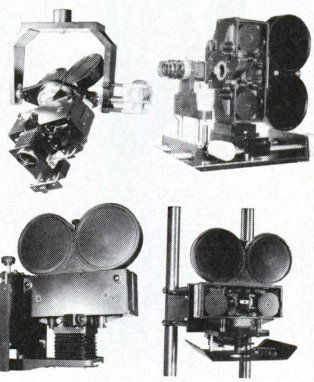

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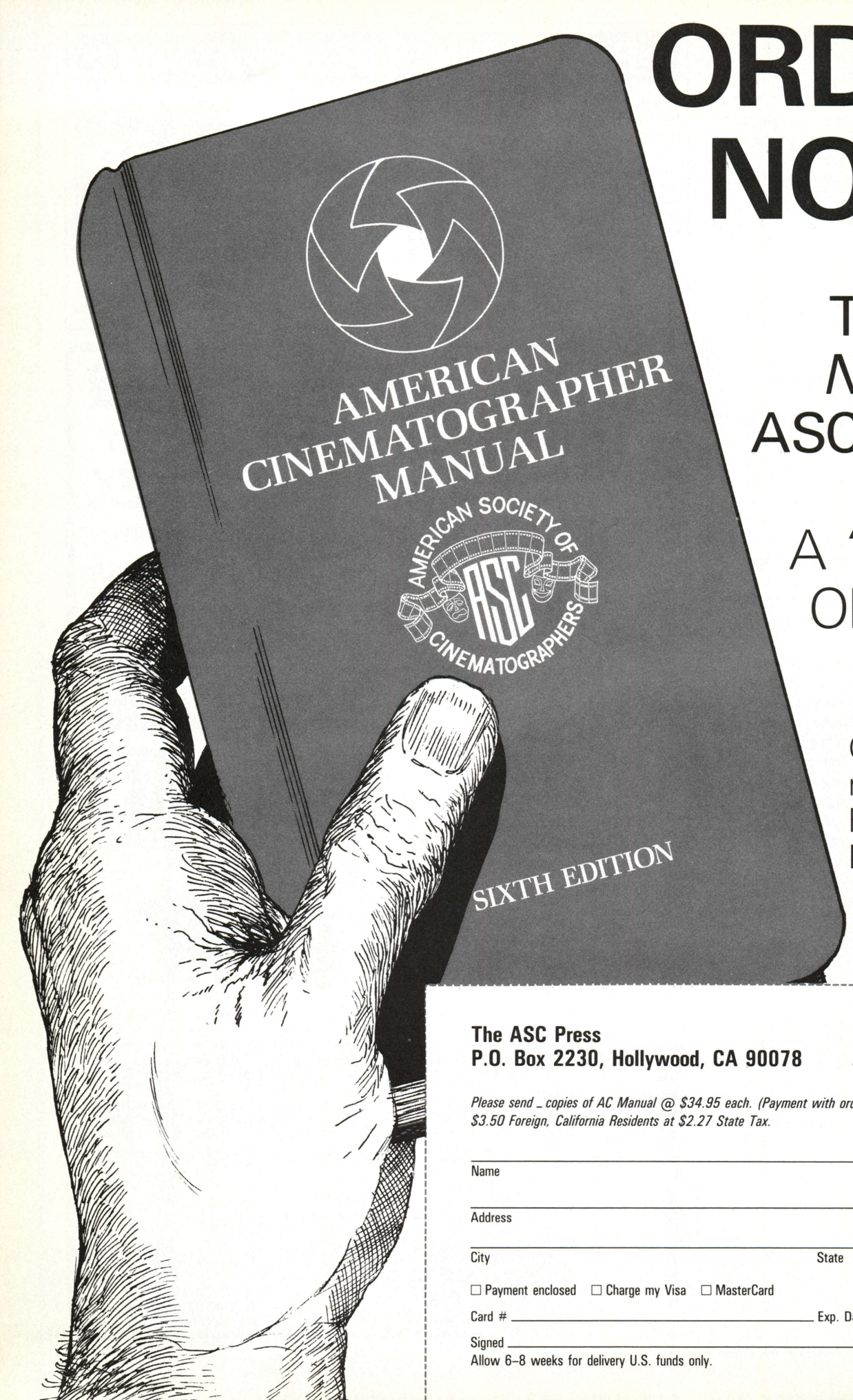

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Photo courtesy of Yamaha Motor Corp. USA

Snowmobile Promo Filled With Thrills

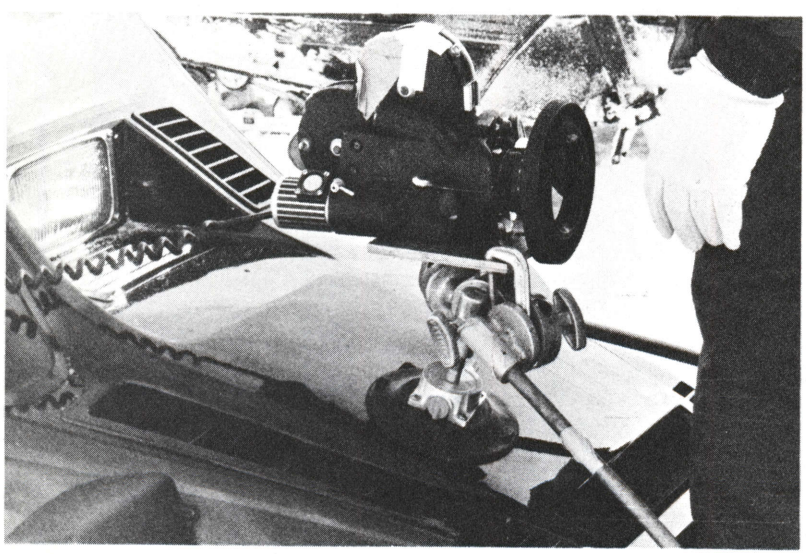
by Clarke Keller

Mix high speed, high thrills and fast snowmobiles at an elevation of 10,000 feet – and throw in lots of snow – and you get *Snow Motion.* That's the title of a new film produced and directed by independent producer/director Judith Bronowski for Multi Media Presentations and their client Yamaha Motor Corporation U.S.A. The finished product – released on video – has the look of a glossy, bright, music-video-sports film.

Snowmobiling has been considered a sport in the U.S. since about 1957, even though back then, it meant hardy souls who built their own snowmobiles. Now it is a major, participant sport enjoyed by the entire family – from three year olds to senior citizens. The size of the sport is best illustrated by the fact that there are now over 7,600 snowmobile-equipment dealers in the U.S. Besides being a sport, snowmobiling is a way of life in some out-of-the-way spots where other forms of transportation are difficult, impractical or non-existent.

Aiming at the "family" aspects of snowmobiling, Multi Media Presentations set out to produce a 15-minute film of this fast-paced high-country sport. Judith Bronowski was selected for the *Snow Motion* film because of her extensive experience producing and directing film documentaries.

"Even when the end product is to be in the video format, there are many occasions such as the *Snow Motion* project when it is very advantageous, even essential, to shoot on film," said Bronowski. "Besides the film look, we needed the added plus of the ruggedness, reliability and por-



Above: ***Two of three cameras, normal and high speed, shooting at an oncoming snowmobile jump. Third camera is under the jump.*** **Right:** ***Cinematographer Don Shoemaker gives last minute instructions to volunteer rider wearing helmet camera.*** **Below:** ***Arriflex 16S camera mounted to snowmobile with Supergrip support.***

Photos courtesy of Judith Bronowski

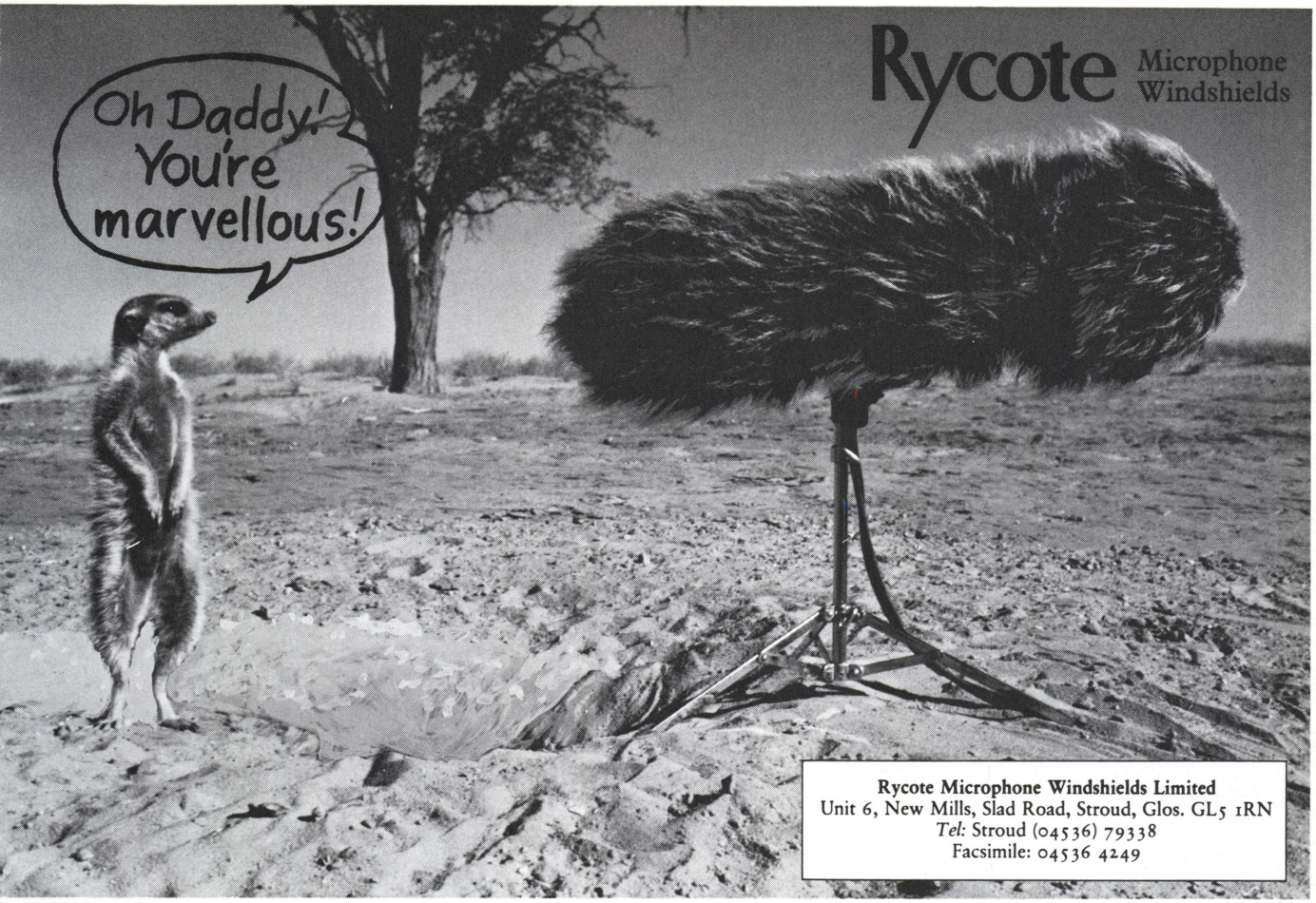
tability of 16mm film equipment, and we needed beautiful images, with lots of sexy slow motion. This could not have been made with video equipment as it exists today.

"Vivid, highly graphic subjects are my forte," continued Bronowski, "and having a lot of action keeps the motion in the motion picture. It is not coincidental that the earliest filmic efforts of pioneers like Thomas Edison were of trains, speeding cars, horses, chases, etc. Movement is what movies are all about and *Snow Motion* is a good example of how originating of film can be a distinct advantage. Fast movements of black snowmobiles on bright white snow would have been a killer for video! Equally important however, was the capability of film cameras to shoot at a variety of speeds and provide gorgeous slow motion effects. After that you have to make people care about all those images."

Bronowski had only two weeks' notice that she had been selected to produce and direct *Snow Motion* "...but because of the exciting visual prospects and the challenge, I jumped at the opportunity. We had a five-and-a-half day shooting schedule which had to be worked around two events: The annual "Snowmobile Festival" in West Yellowstone, Montana, and the availability of the prototype equipment in Cooke City, Montana." The festival is a big event in West Yellowstone and consists of games, contests, snowmobile slaloms, radar runs and so on. The events are for all ages – three years olds sledding downhill on imitation snowmobiles and races and games for older children and teens, as well as high performance events for men, women and seniors.

"This is the family side of the sport. Then, at Cooke City, we spent four days shooting mainly the high performance footage with the new models of snowmobiles." The locations include Daisy Pass and Lulu, at the peak of a 10,000 foot mountain. "Naturally this was a favorite high-difficulty snowmobiling spot, due especially to one very steep drop. It was a breathtakingly beautiful location and I felt it a privilege to be there. I also knew I needed a helicopter!"

Because of a blizzard, shooting was delayed almost one entire day, and the helicopter shots were in jeopardy. "I had my heart set on one particular, beautiful, sunset shot that followed the snowmobilers from the helicopter. But we just couldn't take the chance of waiting around for it. The storm



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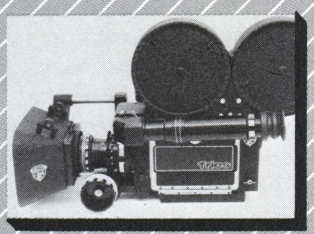

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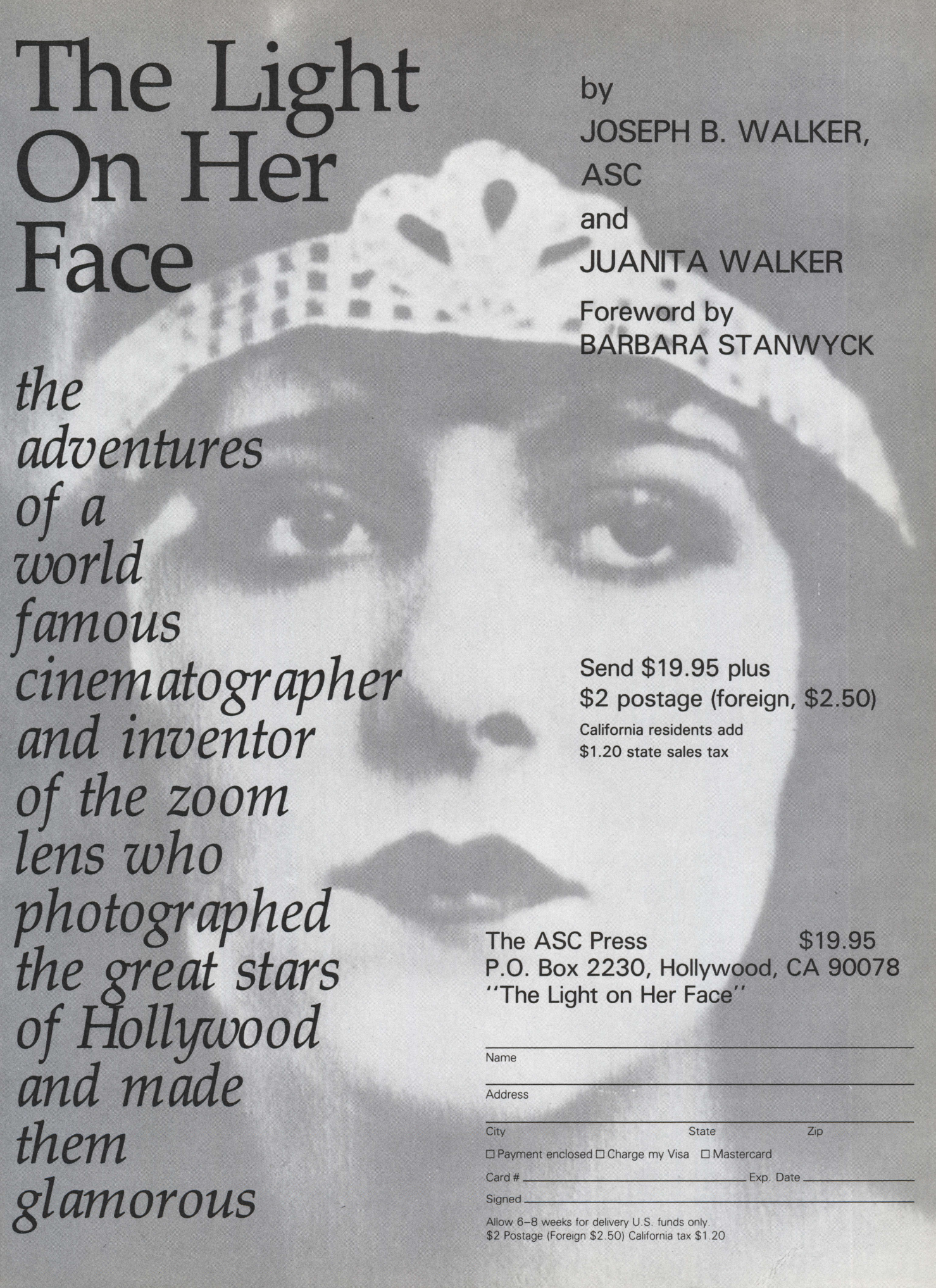
was worsening so I shot earlier in the day. The sunset would have made a great ending!

"It is exhausting, shooting in deep snow," said Bronowski. "Traveling by snowmobile-convoy to each location, wearing ski masks, and helmets, with the noise of snowmobiles, makes it difficult to get people's attention. A walkie-talkie stuffed inside your jacket isn't going to be heard! Signaling a distant rider that you are ready for him to ride a planned pattern toward the camera becomes a problem. Keeping control is stressful because you have to be very safety conscious.

"I was very fortunate to obtain the services of Don Shoemaker because of his extensive experience as a sports cinematographer. His help and expertise added so much to *Snow Motion.* One shot that I recall consisted of one long take down a very narrow bobsled-type run. I call it the Disney E ride." Towing camera and support equipment on sleds behind snowmobiles is slow and cumbersome, and not great for the equipment either! "Alan Gordon Enterprises supplied all our equipment, and shared their cold weather expertise with us. We were well prepared, and it was the rugged yet flexible film equipment that allowed us to function. The Super Grip and the Minicam in a Gordon helmet were super and they kept us within budget," Bronowski added.

"The bad weather had one unexpected benefit for us. Instead of having to move the show to a new location every few takes so that we had virgin snow with no smowmobile tracks, the blizzard winds and new snow covered all the tracks for us. When you're using non-professional riders for stunts that's important. They never ride the same pattern twice! Thank God for the specially developed snowmobile clothing – suits, boots, gloves and helmets – supplied to us by Yamaha! Temperatures ranged from +30° to −25° But we stayed warm."

Bronowski, Shoemaker and the *Snow Motion* production crew shot approximately 12,000 feet of Eastman 7291 color negative which was edited to a 15 minute film. A comfortable shooting ratio is 20-to-1, but it really gave the production some exciting footage to edit. Of the total footage exposed, about 25% was in slow motion, using various frame rates. The equipment included an Arriflex 16HSR High Speed for filming up to 120 frames per second, an Eclair NPR, an Arriflex 16S as a "mounted"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camera for point-of-view shots, a Bell & Howell Minicam-16 fitted into a Gordon safety helmet, a Photo-Sonics Actionmaster 500 ultra high speed camera and an Arriflex 16M which was used with a Continental helicopter mount, plus a Nagra recorder for the sound.

Post production was all done on video. Multi Media Productions usually "posts" productions of Beta Component ¾" for a quality look, but all the transfer facilities were in use or "down" during the required period. Judith Bronowski was able to arrange with Complete Post for both telecine transfer to one-inch and on-line editing – and within the original budget requirements. Editing was accomplished in eight days for off-line plus one day for on-line and one day for sound. "An extremely talented editor – Janice Engel – contributed a lot to the finished production," Bronowski said.

"I really appreciated the fact that I had an incredibly free hand during the entire *Snow Motion* project," continued Bronowski. "Of course concessions had to be made, but very few. My executive producer at Multi Media Presentations was Chris Raser and he really went to bat for me and backed up my creative choices." The *Snow Motion* film/video is now appearing at Yamaha snowmobiling dealerships, snowmobile clubs and has also been entered in several film festivals.

If any conclusion can be drawn from the *Snow Motion* experience it is the following; fast-moving, high-tech, dramatic productions – even those that will be exhibited in video format only – can be and often should or must be originated on film. Compact, rugged equipment, fast lenses and variable speed capabilities offer a director greater creative freedom and the ability to obtain truly beautiful photographic images. △

by Mike Maginot

The Great Gleason
Produced by Jeff Forrester.

The Great One is gone, but his characters live on. According to writer/narrator, Jeff Forrester, Joe the Bartender, Reggie Van Gleason, the Poor Soul, and Ralph Kramden are all creations drawn from Gleason's life or aspects of his personality.

Here are moments of comedy and pathos from "The Jackie Gleason Show" and "The Honeymooners" that don't rely on great camerawork or a big budget. The crude execution of these clips accentuates their humble sincerity, making them fragile treasures of television's golden age.

The Great Gleason is a marvelous appetizer for Gleason aficionados, but for a real feast *The Honeymooners–Hidden Episodes Vol. 1–22* (MPI Home Video) are highly recommended.

• • •

Roxanne
Produced by Michael Rachmil and Daniel Melnick.
Directed by Fred Schepisi.
Photographed by Ian Baker.

As an homage to Cyrano De Bergerac and a romantic comedy for the eighties, *Roxanne* is perfection. Steve Martin, Daryl Hannah, and Rick Rossovich are beautifully supported by Shelley Duvall and Michael J. Pollard.

Ian Baker's practical approach to cinematography keeps the theatrical roots of the story in the background. Characters are framed in a natural environment with an emphasis on illumination that reflects the source light in each scene.

Steve Martin, the wild and crazy guy who wrote the script, turns out to be a hopeless romantic. For insights into the other side of this comic chameleon try *Steve Martin: Live* which contains the classic short subject, "The Absent Minded Waiter," co-starring Buck Henry and Teri Garr.

• • •

Making Mr. Right
Produced by Mike Wise and Joel Tuber.
Directed by Susan Seidelman.
Photographed by Edward Lachman.

In *Desperately Seeking Susan,* Susan Seidelman examined the plight of a

bored housewife who finds excitement in the classified section of her newspaper. *Making Mr. Right* again pokes fun at modern women by suggesting that the only man worth having is a robot.

Carrot topped Ann Magnuson, makes it all work with a brilliant performance in the Rosalind Russell mold, plus a snappy wardrobe.

Barbara Ling's production design and Edward Lachman's cinematography use complementary colors in a fun way that is effective without being intrusive. Locations have been chosen and photographed with care.

• • •

The Secret of My Success
Produced and directed by Herbert Ross.
Photographed by Carlo Di Palma.

How to Succeed in Business revisited. Michael J. Fox goes from Kansas to New York, then up from the mailroom to an executive position.

Surprisingly amusing, despite the familiar plot and the squeaky clean Fox. Ross directs with his usual flair and Carlo Di Palma redefines the look of New York, from á la Allen to á la Ross. The supporting cast shines, especially Margaret Whitton, who delivers double entendres with careless abandon.

• • •

Dragnet (1954)
Produced by Stanley Meyer.
Directed by Jack Webb.
Photographed by Edward Colman, ASC.

The feature film version of radio and television's *Dragnet,* has Sgt. Joe Friday investigating a mob related killing.

Edward Colman dresses what is essentially an extended version of the TV

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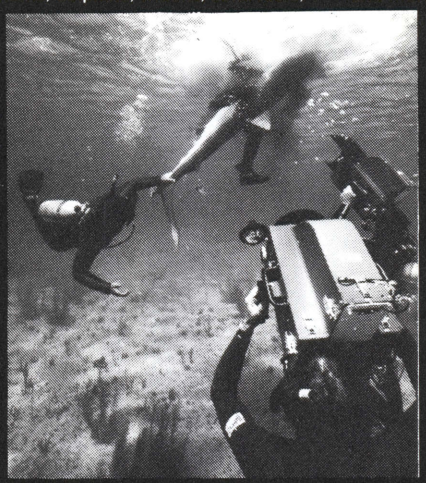

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show with dramatic lighting that will forever etch the hardnose image of Jack Webb into your consciousness.

This is an excellent primer for the true appreciation of Dan Aykroyd's comic interpretation of *Dragnet.* It should be mentioned here that comic relief was always a part of the original and that Jack Webb wasn't above making fun of himself. In a famous *Tonight Show* satire, Webb did with Johnny Carson what was once done to him by Stan Freberg.

• • •

Dragnet (1987)
Produced by David Permut and Robert K. Weiss.
Directed by Tom Mankiewicz.
Photographed by Matthew F. Leonetti, ASC.

There is respect in this parody of *Dragnet* that never interferes with the laughs. Dan Akyroyd and Tom Hanks make a wonderful team.

Christopher Plummer and Dabney Coleman play their parts like cartoon characters and Harry Morgan, thankfully, isn't just given a cameo.

Matthew F. Leonetti's work is straight forward in keeping with the original. The title sequence is excellent, graphically displaying the symbols that have become associated with the television show.

• • •

Native Son
Produced by Diane Silver.
Directed by Jerrold Freedman.
Photographed by Thomas Burstyn, CSC.

This second screen adaptation of Richard Wright's controversial work boasts an excellent cast. Victor Love stars as Bigger Thomas, supported by Elizabeth McGovern, Matt Dillon, John McMartin, Carroll Baker, Akosua Busia, Oprah Winfrey, and Geraldine Page.

Thomas Burstyn's moody lighting captures the period flavor of the piece. James Mtume's music sounds too modern, but manages to reflect the emotional undercurrent of the action.

Jerrold Freedman handles the grisly disposal of McGovern's body in a furnace, after her accidental death, with *misé-en-scene* worthy of Hitchcock or Clouzot. △

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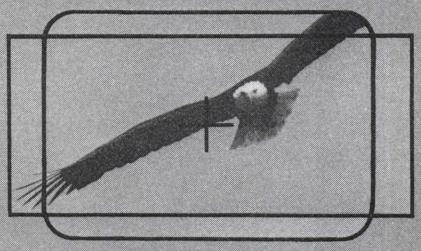

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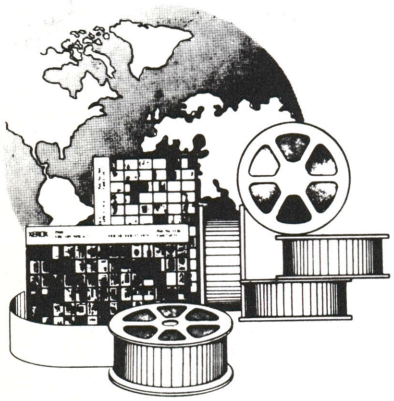

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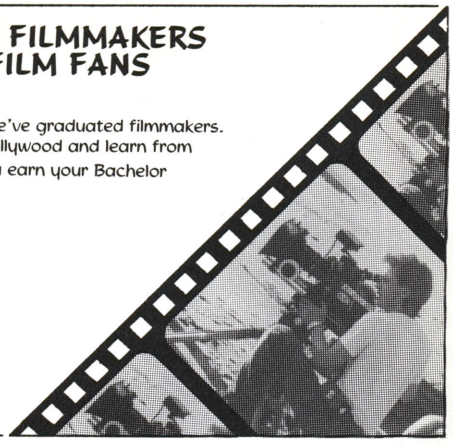

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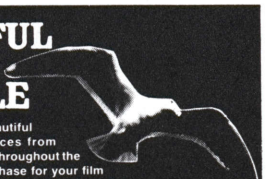

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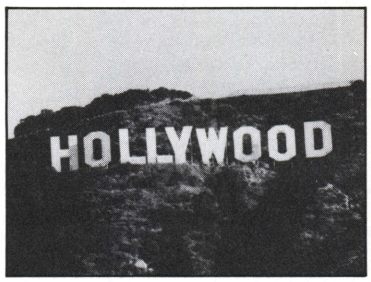

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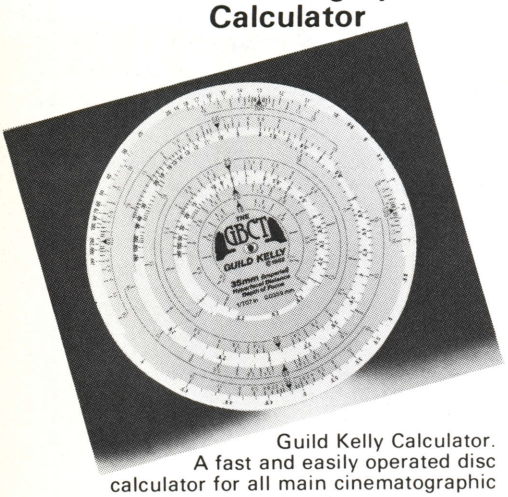

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In Memoriam

Harry Walsh, ASC, a cinematographer for 50 years, died November 9 in Florida. Born and raised in Jersey City, New Jersey, Walsh became interested in newsreel photography while still a schoolboy. He became friends with some of the newsreelmen at the office where they congregated in New York City. "I learned by helping them," he said. "They taught."

He moved to Florida in the late 1930s, a full-fledged newsreel cameraman. As one of the few cameramen in the Southeast, he covered Florida, South America, the Caribbean, and many foreign countries for Universal Newsreel and the MGM News of the Day.

Before long he was also filming theatrical one and two reel short subjects in all parts of the world for all of the major studios. A lot of second unit assignments as director of photography or operator on Hollywood features being made partially on location came his way, which gave him the opportunity to work with many of the great cinematographers for Warner Bros., Columbia, Paramount and Twentieth Century-Fox. Also, he filmed as director of photography and, sometimes, as co-producer, a number of theatrical features made in Florida and points south of the United States.

With the advent of television, Walsh became director of photography and vice-president of Van Praag Productions, making innumerable commercials, some of which won awards at film festivals throughout the world. Eventually, he set up his own companies, Woodburn and Walsh and Walsh Enterprises, producing commercials for Coca-Cola, Chevrolet, Oldsmobile, American Motors, Chrysler, American Oil and others.

He was a member of the White House Press Corps during the Truman administration and accompanied the president on his tour of South America. One exclusive shot he caught with his Eyemo showed Truman waiting for the presidential limousine to be dug out of the mud after it mired down on a backwoods road. The FBI was embarrassed by the scene, but Truman laughed when he saw it. Walsh also spent some time with Generalissimo Chiang Kai Chek in Formosa and covered many news events in Europe.

His second unit work was seen in *Strategic Air Command, The Rose Tattoo, The Barefoot Mailman, Lucky Me, The Miami Story, A Hole in the Head, The Bellboy, Beyond the 12 Mile Reef, The Threshold of Space, Black Sunday* and others. Features as first cinematographer include *Mr. Withers Stops the Clock, Wild Women, Nuestro Regimiento, The Ballad of Gavilan* and *The Wild Rebels.* He photographed Warner Bros.' *Crashing the Water Barrier,* which won an Academy Award as Best Color Short Subject of 1956. He won the 1962 National Television Award for Best Color Cinematography of 1961 for the Chevrolet commercial, *Swamp.*

Harry Walsh is survived by his wife, Lucille; two daughters, Mary Lu and Suzanne; and sons, Harold J. III, Michael, and William. All three sons are professional cinematographers. He was 69.

"Dad devoted all his life to his family and his cameras," said his eldest son. Many of his cameras were donated to the A.S.C. museum. △

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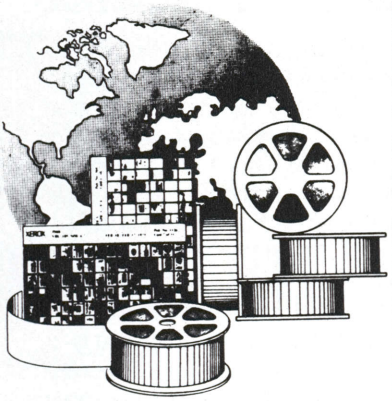

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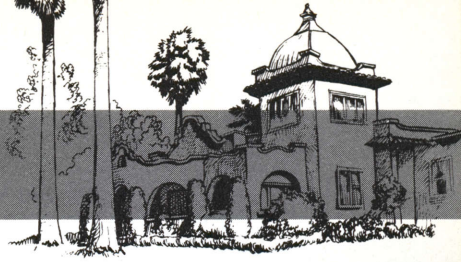


John C. Flinn III and Tony Askins were elected to active membership in the ASC in November.

Askins has worked in the movie industry for 20 years, starting as a film loader at CBS Studio Center before becoming an assistant cameraman. For several years he assisted Phil Lathrop, ASC, on many features, including *Earthquake.* After working as an operator for a number of top cinematographers, he was assigned as director of photography of *The Love Boat.*

"In a six year period we covered most of the world," Askins said. "I was fortunate enough to see how films are made in other countries." He has since been director of photography on *The Colbys, Murder, She Wrote,* and, currently, *Hotel.* "The motion picture industry has been in my family as long as I can remember" (he is the son of Monroe Askins Sr., ASC). "It's a wonderful blessing when a man can go to work loving what he does."

Flinn started as an actor in 1964, but became so interested in the camera that he jumped at the chance to become a second assistant cameraman at Columbia the following year. He was a first assistant from 1968 to 1972, when he was promoted to operative cameraman on *Gunsmoke,* a show he worked on for seven years. He became a director of photography in 1979.

Television series photographed by Flinn include *Hawaii 5-0, Hill Street Blues* (for three years), and his principal work for the past three years, *Magnum P.I.* He photographed the Metromedia four-hour movies, *Wild Times* and *Roughnecks,* and two-hour movies for the three major networks, including *The Flame is Love, Desperate Voyage* and *Island Sons.*

"In 1986 I directed my first film on *Magnum P.I.* and have just completed my second film as director of the first show of the eighth season of *Magnum,*" Flinn reported.

• • •

Associate ASC member Mel Sawelson, treasurer of the academy of Television Arts and Sciences (ATAS), has been named to chair the Academy's Primetime Awards committee, ATAS president Doug Duitsman announced. Sawelson was supervising officer of Primetime Awards for the previous two years and co-chaired the committee for a number of years.

• • •

The November 30 ASC dinner program was a discussion centering on the working relationship between ther cinematographer and the production designer in today's rapidly changing movie industry.

A group of outstanding production designers were special guests for the occasion. Gene Allen, Jim Bissell, Robert Boyle, Jim Hulsey, Richard McDonald, Harold Michelson, and Jan Scott shared their opinions with the cinematographers.

In recent years closer collaboration between production designers and directors of photography has resulted in benefits to both, as well as to the artistic quality of productions. The scheduling of concept meetings with effective balancing of director/cinematographer/production designer input, the importance of terminology, and way sof getting the most out of light, space, motion and color – these and other topics were brought to the fore in the course of a richly informative evening. △

Whither Student Films?

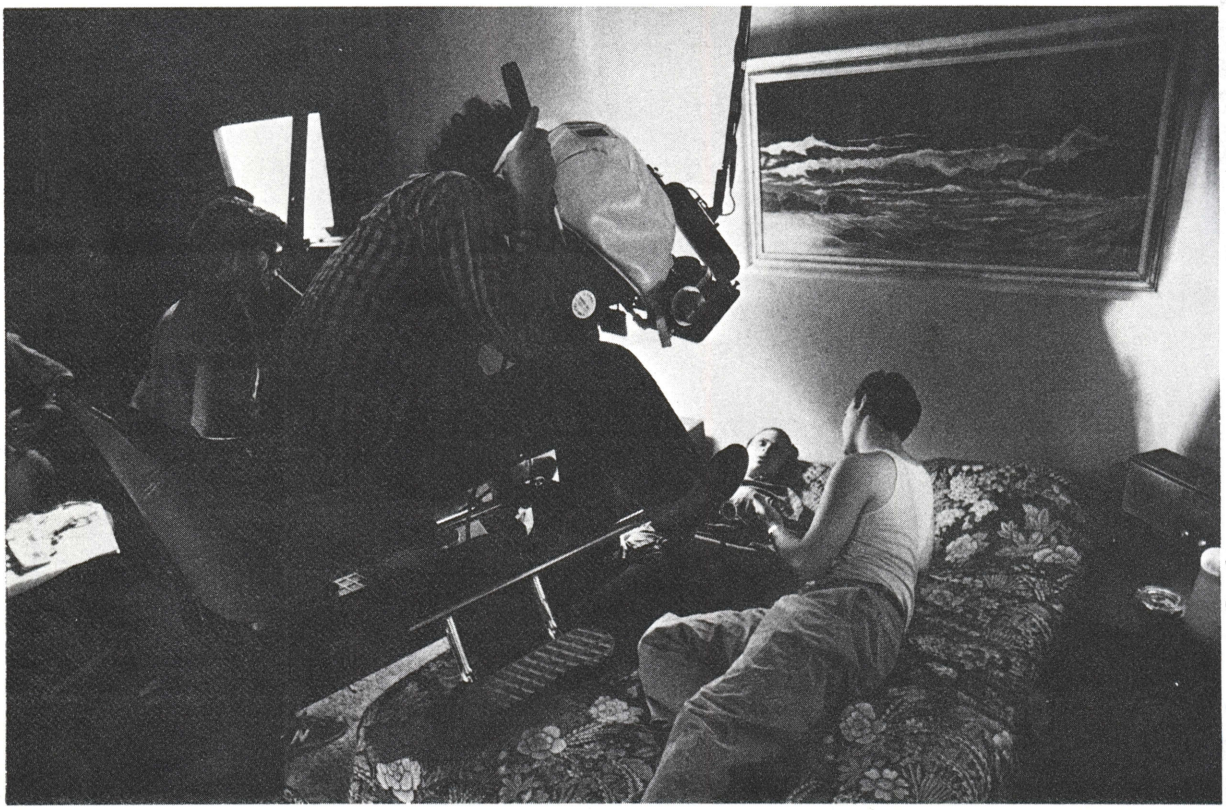


Photo by Steven A. Gunther

***Director of photography Stuart Kiehl and operative cameraman Stephen Natason make a high angle shot of Brenda Hayes and James Salisbury in* Dream Street.**

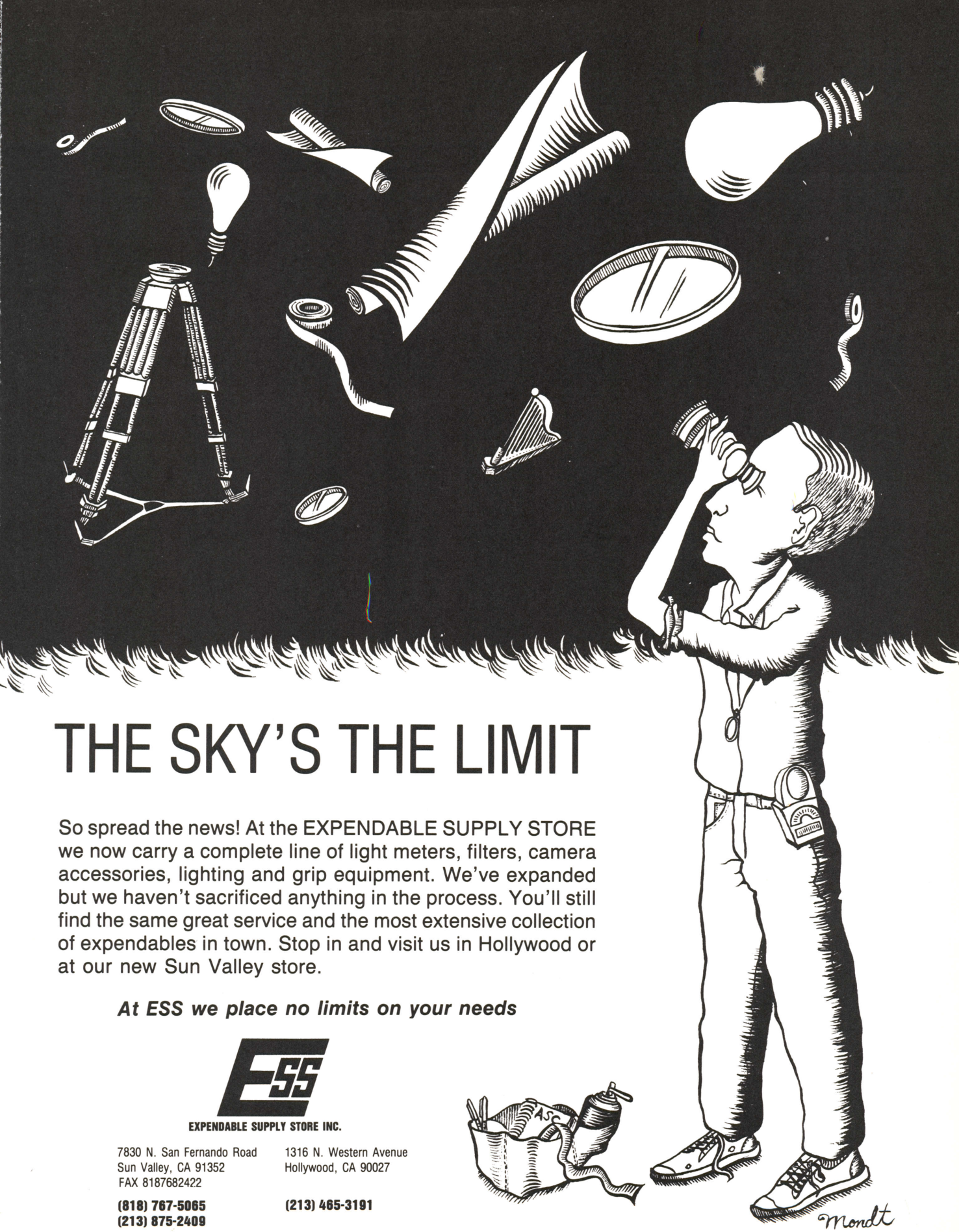
What can be expected from a student film? Plenty, judging from some of the ones we've seen lately. The days when student productions consisted mostly of poor man's imitations of *Blood of a Poet* are long gone. Mainstream or *avant garde,* comedy or drama, satire (in the true sense of the word) or reality – whatever kind of movie one could wish – can be expected from the young filmmakers. Most display imagination, skill and a surprising degree of professionalism.

A fine example that typifies this professionalism is *Dream Street,* a 32 minute 16mm drama photographed in color and black and white and directed by Cal-Arts producer Antonio Tibaldi with a director of photography and crew from The American Film Institute in Hollywood. Tibaldi, Australian-born and Italian-schooled, has directed documentaries and commercials during the past four years. Stuart Kiehl, director of photography, was a commercial and fashion photographer in New York City and Los Angeles before he joined the AFI cinematography program in 1985–6. He was one of only four cinematography fellows enrolled in the AFI's second year film program – most students fix their sights on the director's chair. The original screenplay (by Tibaldi, Scott Jordan and film editor Elisa Bonora), production design (Patte Strong), costumes (Paula Davis), recording (Todd Toon) and music (Robert Campbell) are of high quality. The original score is certainly a pleasant surprise at a time when so many professional musical directors are receiving full-frame credit for "scores" that could have been done as effectively by disc jockeys.

Dream Street is a *film noir* about a young woman (Brenda Hayes) who helps her sweetheart (James Salisbury) to rob a bank. The money, of course, tears the couple apart instead of solving their problems. There is plenty of cold-sweat suspense in the depiction of the robbery and its preparation, with rich details (such as the fussiness of the bank clerks, the reactions of everyone to the threat of a fake bomb, etc.), and an agonizingly realistic study of the effects of the crime on the boy and girl. There are flashbacks in monochrome, with a slight color tone on black and white images.

Much of the mood of the picture is attributable to the photographic technique. James Wong Howe said that W.S. Van Dyke told him to save his best efforts for the close-ups, because "that's where the money is." Kiehl's close-ups of Brenda Hayes' expressive face, with their emphasis on eyes that mirror her inner torment, certainly pay off. So, too, do the abstract patterns of the buildings of downtown Los Angeles, the cold elegance of the bank interiors and the suffocating atmosphere of a motel room full of guilt and money, all of which are skillfully captured on film.

Kiehl has since completed an AFI film and is working in the industry as well. —GT



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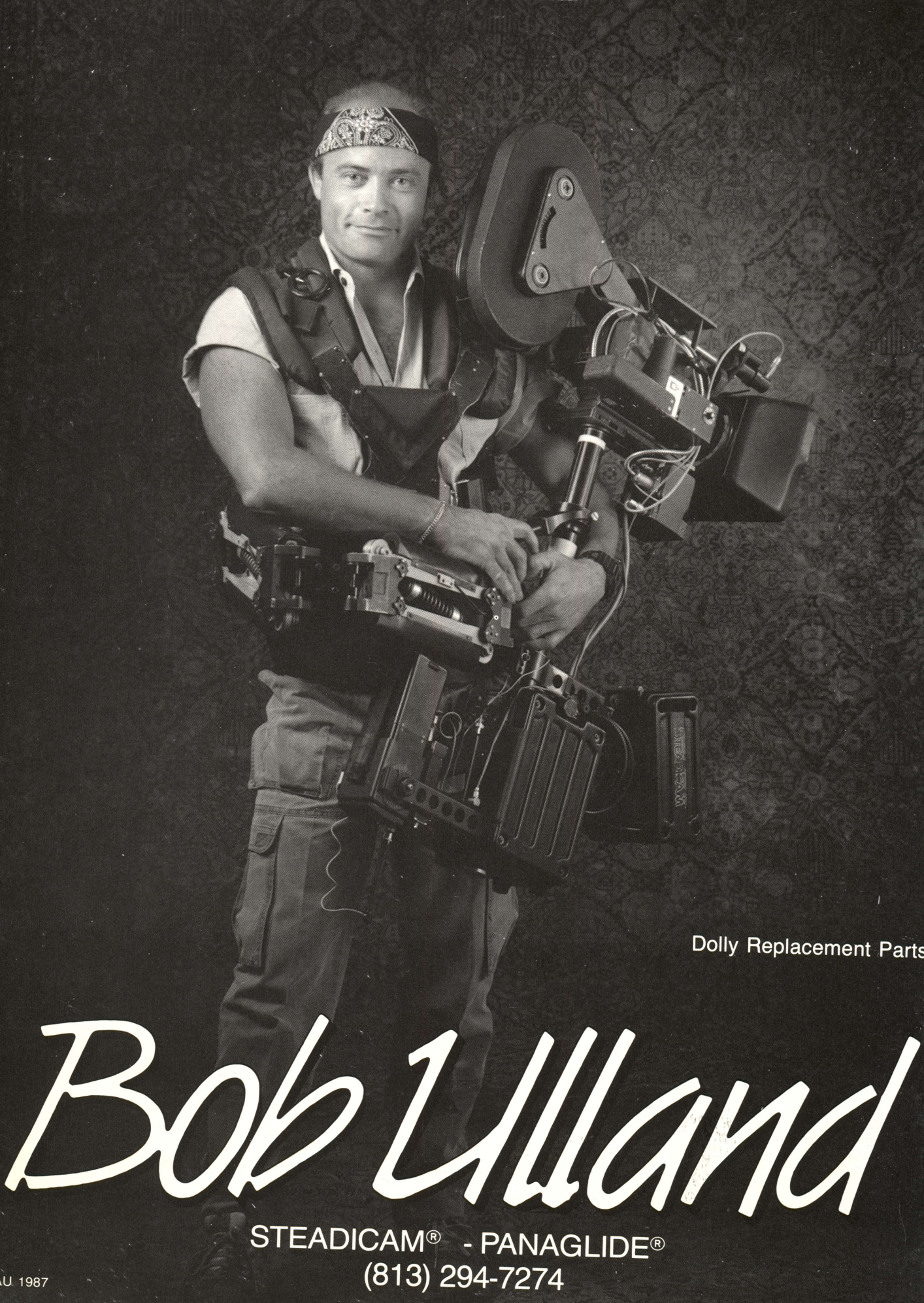
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